

Railway Age

Vol. 80

May 15, 1926

No. 24



Paris-Berlin-Warsaw Express at Hanover, Germany—Photo, Rudolf Kreutzer, Hanover

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Published every Saturday and daily eight times in June by the

Simmons-Boardman Publishing Company, 30 Church Street, New York

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The Railway Age is a member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulations (A. B. C.)

Entered at the Post Office at New York, N. Y., as mail matter of the second class.

Subscriptions including 52 regular weekly issues and special daily editions published from time to time in New York, or in places other than New York, payable in advance and postage free; United States, Mexico and Canada, \$6.00. Foreign countries, not including daily editions, \$8.00. When paid through the London office £1.15.0. Single copies, 25 cents each, or 1s.

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OKONITE-CALLENDER

SEATTLE

Railway Age

Vol. 80, No. 24

May 15, 1926

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Color, Cleanliness and Increased Traffic

ELECTRIC railways—a considerable number of them at least—have found that keeping their cars bright by constant cleaning and the use of plenty of paint, in attractive colors, brings direct results in the form of increased business. Bus operators likewise are finding that attractively painted vehicles and neat and comfortable interior fittings are bringing them business. The railroads also are showing increasing enterprise in decorating and fitting out their trains—but with this difference: The railroad generally restricts its improvements in appearance to the interior of the car. But why? If bright colors bring business to buses and trolley lines, why not to trains as well? Some roads are working along these lines, but is not the subject worthy of even wider consideration? Railroads are merchandisers of transportation. The successful merchandiser in other fields generally gives much consideration to the design of his package, making it as convenient, as bright and as attractive as he can. In the merchandising of passenger transportation the car is the package. Speed, safety and comfort are the commodities offered for sale—but will the public always choose the best when it is offered to them in grimy packages of nondescript color? Unfortunately they may often choose less speed, less safety and less comfort when proffered in an attractive package.

Significance of the Watson-Parker Bill

THE passage of the Watson-Parker bill by Congress is an event of great importance. Much progress has been made toward a solution of the railroad problem under the Transportation Act. This legislation involves the first radical change in that law. Under the Transportation Act both rates and wages have been subject to federal regulation. Under the law as amended, rates will continue to be fixed by the government. On the other hand, no permanent government body will have any part in determining wages. The only occasions on which any temporary government body will have any part in fixing them will be those in which the President appoints an emergency fact-finding commission because of failure of the railways and their employees to fix them by agreement or voluntary arbitration. This change in the law has been made by Congress, not in response to any public sentiment in favor of it, but because the railway labor leaders and a large majority of railway executives joined in asking for it. It is based upon the assumption that railway strikes are more likely to occur and the wages and working conditions of employees are less likely to be made reasonable, when labor disputes are passed upon by a permanent government body upon which the public holds the balance of power, than under a policy which leaves the determination of wages and working conditions to the unhampered ac-

tion of the railways and the employees, except in emergencies, when the President may be called upon by a federal board of mediation and conciliation to intervene. There has been no past experience that supports this assumption. It has been accepted as a basis for legislation in this instance because labor leaders and railway spokesmen have represented to Congress that there may be reasonably expected in the future, co-operation between the railways and the employees that will be in their interest and that of the public. In passing the Watson-Parker bill, Congress has placed upon representatives of the railways and the employees the entire responsibility for results, and only close co-operation and constant regard for the public interest by them will secure results that will justify the new legislation and the representations that have been made in support of it.

Will There Be a Labor Shortage?

EVER since the depression which occurred in the fall of 1920 the railroads have enjoyed a singular freedom from labor shortages such as confronted them almost continuously during most of the duration of the World war. In fact, the ease with which it has been possible to obtain an ample supply of labor during the last six years has given rise to complacency toward labor problems. This attitude is now being subjected to a severe shock by a sudden and unforeseen shortage of common labor in many quarters. Whether this is but a temporary condition or a forerunner of an acute deficiency in the supply of labor during the entire summer cannot be determined at this time. But the fact that the railroads in certain parts of the country are experiencing difficulty in obtaining the men required to build up their track forces to meet the needs of the summer's program of work should serve as a warning. It points to the necessity of organizing the season's work as quickly as possible. It also serves to emphasize the advantage of greater stability of employment in maintenance of way work. While the railroads have already made marked progress in this direction, much remains to be done.

Highway Crossing Dangers from Another Angle

STATISTICS of highway crossing disasters, at all times sufficiently appalling, have lately taken on a new aspect, tending further to complicate the problem of curing the evil; the large and increasing proportion of cases where the automobilist, instead of being run down by the locomotive as he attempts to cross the track, has himself run his car into the side of a moving or standing train. A railroad officer in California, quoted recently in a San Francisco paper, said that 35 per cent of the crossing accidents on his road in 1925 were of this class. Why this increase? No one has offered any specific explanation;

but Marcus A. Dow, to whom the railroads have in the past been indebted for numerous constructive suggestions, has published a fact which affords strong presumptive evidence of a cause; namely, that in the year 1925 no less than 14,505 persons were arrested (in 185 cities and towns) for driving automobiles while intoxicated. Making a conservative calculation from these and other figures, he estimates that in the United States there were at some time last year 124,000 persons driving automobiles on our highways while under the influence of intoxicants; and conditions are probably no whit improved today. Speaking for the Stewart-Warner Safety Council, of which he is the director, Mr. Dow calls attention to the really disgraceful laxity in the practice of police and courts in the punishment of these law-breakers. Only 21 per cent of the persons arrested for driving while intoxicated were sent to jail, and only 46 per cent fined. Of 146,766 persons arrested for speeding, but not charged with intoxication, less than half received any punishment at all, and only one per cent went to jail. Railroad managers are sufficiently burdened already with duties outside the railroad field, but they will be forced to consider an addition to the list; for the evil here noted is a menace to their fast passenger trains every day in the year. The duty to call for adequate law enforcement, to which every citizen is subject, rests very definitely on the common carrier who is responsible for placing the very best safeguards around the lives of thousands of passengers every day. There is one very definite duty which every railroad can do in this connection; see that there shall be the fullest publicity of every crossing smash where intoxication is a cause, or probable cause, with *all necessary detail*. Details should include, where appropriate, all suitable evidence as to the police courts' efficient or inefficient performance of their duty.

Reversal in Financial Returns of Railways

THE remarkable reversal which has occurred within the last ten years in the comparative financial results gained by the railways in the territory east of the Mississippi river and those west of the river is well illustrated by the statistics of earnings, operating expenses and net return for the first three months of this year. In this quarter the railways in the eastern district earned a net operating income at the annual rate of 5.53 per cent on their property investment, those of the southern district at the rate of 5.85 per cent, and those of the western district at the rate of only 3.66 per cent.

In the early part of 1917 the railways of eastern territory were suffering so severely from increases in their operating expenses and consequent declines in the net return earned by them that they began a proceeding before the Interstate Commerce Commission for a 15 per cent advance in their rates, part of which was granted in 1917 and part in 1918, after government operation had been adopted. In the first quarter of 1917 the total net operating income earned by the Class I railways was \$179,430,470, of which those in the territory east of the Mississippi river earned \$94,451,537 and those west of the river \$84,978,933. In the first quarter of 1926 the total net operating income earned by the Class I roads was \$223,558,765. Of this the railways east of the Mississippi river earned \$152,921,131, an increase over the first quarter of 1917 of \$58,469,594, while the western roads earned only \$70,637,634, a decline as compared with the first quarter of 1917 of \$14,341,299. In the first quarter of 1917 the net operating income of the western lines was 46 per cent

of the total earned by the Class I roads, while in the first quarter of 1926 it was only 31 per cent of it.

This reversal in the relative financial situations of the railways east and west of the river has been due to various causes. In 1917 the general level of rates in eastern territory was much too low. In consequence it has been raised relatively more than in any other part of the country. The advance in rates in the southeast has been less than in the east, but the southeastern lines have benefited by a large increase in traffic. In the west the advance in rates within the last ten years has been somewhat less than in the southeast and much less than in the east, and meantime the competition of the Panama canal for freight business and of motor vehicle for passenger business has prevented any substantial increase in traffic.

The development of the west in the past has been very largely due to the development of its railways and will be largely dependent upon it in future. The people of the west may well ask themselves how their railways are going to be able, if they continue to earn so much smaller net returns than those of other territories, to make the improvements and build the new lines necessary to render possible such prosperity in the west as now prevails in the east and especially in the southeast.

Time Tables, Train Orders and Signals

RAPID progress has been made during the last few years as relates to moving trains by signal indication without written train orders. This movement has an interesting historic background. The operation of trains by strict time-table right, involving time spacing between trains, was first modified in 1851 on the Erie Railroad by the use of a train order transmitted by telegraph to supersede time-table rights. The idea of maintaining a space interval between trains, as required by a block signal system, was not new at even that early date, for the New Castle & Frenchtown (now a part of the Pennsylvania) used a manual block signal system as early as 1832. An automatic block signal installation operating on the closed track circuit principle was placed in service in 1872 on the Philadelphia & Erie (now a part of the Pennsylvania).

Serious accidents have resulted at numerous times on account of inadequate protection of the time interval method of operating trains by timetable and train orders only. Additional protection of the space interval is provided today by manual block signals controlled by operators under the direction of the dispatcher on approximately 71,000 miles of road in the United States; however, permissive movements into occupied blocks are forbidden on only 5,162 miles of these lines. As a result, when traffic is heavy, mistakes in train orders, the overlooking of meeting points, etc., inside the blocks, endanger the effectiveness of the manual block. Therefore, in order to afford protection in case of errors which may occur in the use of train orders or manual block, automatic signals have been installed on the heavier traffic lines, totaling 43,839 miles of road with 69,839 miles of track. The ability to operate following trains with close space intervals, as permitted with safety by automatic block signals, has also been an important factor in increasing such installations.

The movement now is to use these signals to direct train movements without written train orders, not only for normal direction train movements on multiple track lines but also on single track, and for movements in either

direction on all tracks of multiple track systems. In a paper presented before the Pittsburgh Railway Club recently, H. M. Sperry outlined the development of different methods of directing train movements, pointing out the advantages and disadvantages of each system, and citing numerous cases where trains are being directed by signal indication, with data on the savings accomplished. An abstract of this paper, which was published in the *Railway Age* of April 3, includes a wealth of information for railroad officers who are seeking means of increasing track capacity with safety.

Statistics Regarding Material Stocks

STATISTICAL measures of efficiency often are highly useful; but statistical comparisons between different railways may be highly misleading if adequate allowance is not made for differences in operating conditions.

A question which has received much discussion within recent years has been that of the best statistical measure to use in trying to determine whether a railway is carrying a larger investment in materials and supplies than is compatible with efficient management. The Bureau of Valuation of the Interstate Commerce Commission in a memorandum on October 13, 1922, held that the investment of a railway in materials and supplies should represent ten per cent of annual operating expenses, which was based upon an analysis of statistics of the railways for the years 1914, 1915 and 1916. This analysis showed that the investment in these years averaged 12.6 per cent of annual operating expenses, but included materials for additions and betterments. Computing upon this basis, William W. Tirrell, in an article in the *Railway Age* for April 24, 1926, found that at the end of 1924, 68 railways had an excess stock of materials and supplies aggregating \$158,000,000, and that during the five years ending with 1924 their excess stock averaged \$200,000,000.

We have received several letters criticising the formula of the Bureau of Valuation, and also the conclusions based upon it by Mr. Tirrell in his article. We published one of these letters last week under the caption "Answering Mr. Tirrell." We publish this week a letter upon the same subject from R. C. Vaughan, vice-president of the Canadian National Railways.

The figures given by Mr. Tirrell showed that the investment in the stocks of the railways on December 31, 1924, varied from as low as 5.38 per cent to as high as 30.66 per cent of their operating expenses in 1924. If these statistics accurately reflected efficiency they would show that some railways are about five times as efficient as others. If the Bureau of Valuation's figure of ten per cent of annual operating expenses could be accepted as an exact measure of efficiency, the statistics would show that at least 15 railways were carrying stocks that were too small, while some were carrying stocks that were two or three times too large.

The figures do not show these things, however. There is not and cannot be any exact statistical measure of the stock of materials and supplies that each individual railway should carry, any more than there can be an exact statistical measure of what the operating ratio, or the transportation ratio, or the average miles per car per day of each railway should be. The conditions of different railways vary widely. Locomotive fuel is a large factor in supply stocks. One railway may be a large originating carrier of coal, and will in consequence have to carry only a comparatively small stock of it and will get it at a low price. Another railway may be remote from a coal

producing territory and will, therefore, have to carry a relatively large stock of it and pay a much higher price for it.

One railway may be making almost no expenditures for improvements or new construction, while another may be making large expenditures for both. The former will, therefore, require stocks only large enough to draw upon for current maintenance, while the latter will have to carry stocks large enough both for current maintenance and for its additions and betterments work.

The stocks required by an individual railway or all the railways may vary widely from year to year because, for example, in one year there may be done a large amount of additions and betterments work and in the next year practically none at all. The fallacious and unjust conclusions that may be suggested by a particular formula adopted largely in disregard of conditions are well illustrated by those actually suggested by the formula of the Bureau of Valuation. The investment made in road and equipment by all the railways in the three years ending on June 30, 1916, averaged less than \$370,000,000 annually. It averaged almost \$700,000,000 annually in the three years ending in 1913, and about \$500,000,000 annually in each of the three year periods ending in 1907 and 1910.

The stocks of materials carried will, of course, ordinarily be less in proportion to operating expenses when a small amount of additions and betterments work is being done than when a large amount of such work is being done; and yet the Bureau of Valuation's formula is sometimes used in disregard of the fact that it is based upon the stocks carried and the operating expenses in a period of three years when the investment made in railway properties was less than in any other period of three years from that beginning in 1904 to that ending in 1916.

There is another factor of importance which should be considered in this connection. This is, that a uniform method of accounting for material is not used by the railways. On some of them stored coal, current coal supply in cars and in bins, ties awaiting treatment and construction material of all kinds are included in the material account, while on others some of the above items are not included, which naturally makes accurate comparisons impossible. There is need of standardization of methods of accounting for materials and stores, and the Purchase and Stores Division, the Association of Railway Accounting Officers and the Interstate Commerce Commission should co-operate in bringing it about.

There is as good reason for compiling and disseminating comparative statistics regarding stocks of materials and supplies on hand as for compiling and disseminating comparative statistics regarding train loading, car loading, average miles per car per day, etc. Such comparative statistics, when allowances are made for differences in conditions, afford railway managers opportunities to compare the results they are getting with those their neighbours are getting. It would be unfair and misleading to say that all railways should have operating ratios less than 70 per cent because some railways have. Likewise it would be unfair and misleading to set up some particular ratio between investment in stores and operating expenses or any other factor and condemn as inefficient the management of the purchases and stores department of every railway whose ratio exceeded this. Hardly any two railways will carry the same amounts of stores in proportion to the amount of traffic handled or the operating expenses incurred. But if comparative statistics show that year by year some railways are reducing the stocks carried by them more in proportion to their traffic and operating expenses, or that some are turning their stocks over faster than others, this is evidence of differences in efficiency which should not exist.

How to Regulate a New Industry

COMMENTING on an estimate of a \$4,000,000,000 annual turnover in the bootlegging industry, which was presented recently to the sub-committee of the Senate judiciary committee holding hearings on proposed modifications of the prohibition law, the Wall Street Journal observes that this is about two-thirds of the railroad business for a year and suggests that it may owe its subscribers an apology "for neglecting one of the first half dozen fields of commercial enterprise." It also discusses the probability of the regulation of this industry as a public utility to be required to adhere to published tariff rates, etc. If this idea is to be followed up the *Railway Age*, or Senator Cummins, who is chairman of the Senate judiciary committee, after having been some years chairman of the committee on interstate commerce, could easily suggest from the experience of the railroads several varieties of regulation which would lend themselves readily to the subject.

Naturally, one of the first suggestions that comes to mind, although it took some years of railroad regulation to evolve it, is that if the industry is to be preserved in full vigor it should be "guaranteed" a return of $5\frac{3}{4}$ per cent, "as nearly as may be," except in years in which the consumers are led to feel that rates which would produce such a return would be more than the traffic would bear. To provide for such years a jokesmith resolution should be made an integral part of the law, requiring that persons in a depressed condition should be served at such reduction in price as shall be found non-discriminatory against other persons, or localities, under substantially similar circumstances and conditions.

In order to allow plenty of time to ascertain whether, in fact, a rate of $5\frac{3}{4}$ per cent in actual experience is proper, there should be a provision for a valuation to be made some time in the next ten or fifteen years, of the property owned and used for common beverage purposes; also for a recapture by the government temporarily, pending the completion of the valuation, of half or all of the excess earnings above a fair return; both the rate of return and the valuation to be fixed by the officers of the Anti-Saloon League. In this case there would doubtless be little objection to basing the valuation on cost of reproduction new, perhaps with some allowance for appreciation, as this would approximate the "probable necessary, reasonable investment in the property." If it should appear that the necessary hearings to determine such a fair return or violation would probably be unduly protracted, provision might be made for a voluntary recapture of all loose cash left after the weekly or monthly payroll has been met. The contingent fund thus established would be divided among the bootleggers who by reason of their unfortunate location or natural exhaustion of their traffic should be unable to obtain a fair amount of return customers.

Of course there should be a law against agreements to maintain prices, but, to prevent too much competition in a community, certificates of public convenience and necessity should be required, preference to be given in the issuance of such certificates to newcomers to the business who have nothing in their past records to be criticized. To keep open the opportunities for promising local politicians to gain an apprenticeship in the science of bootleg regulation, state commissions should be created with jurisdiction over intrastate bootlegging, including the manufacture of raw materials, while the interstate and foreign aspects of the business should be reserved for federal regulation from the outset. Because of the possibility of discrimination between the local and the more interstate or foreign product, however, the federal body

should be given jurisdiction over prices and as a guarantee against watered stock it would also regulate the issuance of labels.

After so many years of experience with railroad regulation, however, it would be a cause for regret if some modern improvements could not be included in our code of bootlegging regulation. For instance the doctrine that "the customer is always right." To insure that the industry should never forget that it exists solely for public service, not to earn profits, all orders or decisions of the regulating commissions might well be made subject to a recall, by a clear mandate of the people, as expressed in a Presidential election, a count of the speeches in the Congressional Record or by a newspaper poll.

Also this might be a good time to begin to recognize the idea that "labor creates all" or almost all of the value involved and that wages should be based on equal division of the gross earnings. In case the gross earnings under regulation are not enough they should be supplemented by a Congressional appropriation.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian,
Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Dependent America, by Wm. C. Redfield. The locomotive as a "product of the continents" is an infrequent presentation. Besides telling what foreign elements such as Canadian nickel, Peruvian vanadium, and Chinese tungsten go into locomotives and the tools used in building them, Mr. Redfield sets forth what other highly important foreign-produced items are necessary to the conduct of our daily life, where and how they are brought in, and the effect on our relations with other countries. 268 p. Pub. by Houghton-Mifflin, Boston, Mass. \$2.50.

List of Corporate Names of Common Carriers, compiled by Section of Tariffs, Bureau of Traffic, Interstate Commerce Commission. Prepared from the records of carriers filing tariffs, concurrences or powers of attorney with the Commission, and should be useful for reference as to what the names of our carriers are at the present time. Pipe lines and express companies included. 52 p. Pub. by Govt. Print. Off., Washington, D. C. 30 cents.

Pegasus: Problems of Transportation, by Col. J. F. C. Fuller. The volume on transportation in the "Today and Tomorrow Series." It reviews the history of transport, and particularly of railroads, and proceeds to discuss the possibilities of roadless vehicles. Col. Fuller was principal staff officer for tanks in France during the war. In this connection the types and cost of operation of roadless vehicles described by Sir John Eaglesome in the *Journal of the Institute of Transport*, March, 1926, p. 230-237, may be interesting supplementary reading. 95 p. Pub. by Dutton, New York, and Kegan Paul, Trench, Trubner & Co., Ltd., London. \$1.00, and 2 shillings sixpence, respectively.

Periodical Articles

Aviation Comes Out of a Tail Spin, by W. W. Stout. Statement of Gen. Atterbury, President of the Pennsylvania Railroad, on rail and air co-ordination, p. 3-5. *Saturday Evening Post*, May 8, 1926, p. 3-5, 137.

A Study of the Motor-Bus as a Competitor of the Railroads, by J. E. Slater. *Journal of Land and Public Utility Economics*, April, 1926, p. 129-155.

Trend Toward Federal Control of All Highways Used in Interstate Transportation, by C. W. Tooke. Review of recent judicial decisions seems to indicate that history of regulation is repeating itself in regard to another form of transportation. *Aera*, May, 1926, p. 574-583.

Why Is Business Left Out? by Frank R. Kent. A pertinent analysis of history as written more or less along the lines of least resistance. Comment on the place usually allotted to railroads and what they really did to history, p. 14. *Nation's Business*, May, 1926, p. 13-15.

Letters to the Editor

Crosstie Requirements and Forest Conservation

MADISON, Wis.

TO THE EDITOR:

Railroads today require on the average a better and a bigger tie than in the past. This is, of course, their business right, but the effect on timber utilization is immediately evident and introduces new problems that demand consideration in the public interest. For example, what profitable use can be made of the rejected tie with a small rotten spot in it? What is to be done with that part of the tree which will yield only the smaller size ties, when it is difficult to market small ties at a fair profit? Although the proposed new standard specifications do not so provide, certain railroads refuse to accept ties produced from sound dead trees or from the less desirable species, such as the true firs, several species of oak, and others.

Some railroads set up tie specifications apparently without thinking very much about the effect on timber utilization and let the matter drop, while others adopt a different attitude and are anxious and willing to initiate service tests to determine whether the rejection of certain material, because of their acceptance standards, is justified. For example, a large western road at present rejects ties cut from dead wood or from wood stained with red heart, but as a progressive corporation interested in our timber supply, it retains an open mind as to the restriction, and in order to find out if the practice is correct, plans to initiate service tests using treated ties cut from dead timber and from red heart timber, along with treated ties cut from green timber of the same species as a check. In a few years the answer will be available, well substantiated by facts.

Might not the engineer, if so inclined, be able to use more small and low grade ties on sidetracks, branch lines, etc.?

Where evidence is not altogether conclusive that certain kinds and sizes of ties are unsuitable, is it not the duty of the public to insist that service tests be initiated to clinch the argument and settle the question? Perhaps it would be found that prevailing practice is faulty, and that the conclusions reached formerly are in error; or by doing research work on the question a way of overcoming obstacles might be developed. Certainly the timber-minded engineer has a wonderful chance to aid forest conservation by correlating engineering requirements, in so far as practicable, with the kind of material which can be produced in the woods with the least waste.

There is another way in which the railroads can save timber. Preservative treatment, by prolonging the life of wood, reduces the drain on our forests and usually saves money for the consumer in the long run. Treatment of all ties is standard practice with certain progressive railroad organizations. It is good business because it has been found profitable. Despite these facts only 50 or 60 per cent of the ties used in 1924 throughout the country as a whole were treated. Almost any one will admit that most of the ties used should be treated and that the present knowledge of treating practice and preservatives is satisfactory for practical purposes. Officers who still insist on the use of untreated material

must accept the responsibility of being a party to wood waste, for the machinery to save is available.

The plea, then, is that the consumers sense the full effect of present-day conditions and the requirements of conservation and, without slighting their own needs, assist in overcoming some of the obstacles which stand in the way of thrifty forest utilization. The task of properly using the forests is important enough to warrant the best thought both of those who are directly concerned in the use and supply of wooden products and of national organizations interested in the subject from the standpoint of common interest.

R. D. GARVER,

Assistant Chief, Section of Industrial Investigations,
Forest Products Laboratory, U. S. Forest Service.

Supply Conditions on the Canadian National

MONTREAL, Que.

TO THE EDITOR:

Referring to the article published in *Railway Age*, April 24, on the savings to be effected by avoiding surplus material, I would like to point out that while the figures given may, in a sense, be of some value for comparative purposes, the method of arriving at the comparison cannot apply in all cases, and, as the figures for the Canadian National Railways are mentioned, I wish to draw attention to some facts in respect to our situation, which will, I am sure, show conclusively that the comparison given is an unfair one, so far as this road is concerned.

Our stock on hand on December 31, 1924, as given, was \$50,459,444.66 or 23.11 per cent of the operating expenses. The investment in materials and supplies in December, 1925, was \$42,582,983.87, or a reduction for the year of \$7,876,460.79, or 15.61 per cent.

There are many circumstances entering into our situation which do not apply to most other railroads. In the first place, we have 22,191.77 miles of first main track embracing two complete transcontinental lines from coast to coast, with numerous branches. Several thousand miles of this trackage runs through undeveloped territory, which is hundreds of miles from the source of material supply.

For much of the territory coal must be shipped in by water during the summer months. Therefore, we must have a sufficient stock of coal on hand by December (which is usually the close of navigation) to last until the end of May of the following year, otherwise it would be necessary to haul coal from Eastern Canada or Western Canada for several thousand miles to take care of that territory, and, if that were done, the cost of such coal would be a great deal more than is paid for coal imported from the United States, after duty and other charges are paid on it. Unfortunately, the bituminous coal supply of Canada is located at the two extreme ends of the country. In the West, we have bituminous mines in Alberta and British Columbia, while in the East they are in New Brunswick and Nova Scotia, so that there is a central territory, embracing much of Ontario, where our most important lines are located, that can only be served economically by coal imported from the United States. It will be observed, therefore, that at the end of December, when our year closes, our coal stocks are about at their peak.

Our system as a whole on December 31, 1925, had about five months' supply of coal on hand. I understand that most of the railroads of the United States do not carry more than a 30-days' supply, so that we had on

hand at the end of our year nearly four-months' supply over and above what might be considered a normal supply of coal for railroads of the United States. The value of that excess coal supply would be about \$10,000,000. We use between two and three million tons of coal from the United States per annum on our lines, the balance coming from mines in Canada. If this \$10,000,000 worth of surplus coal which other railroads are not required to carry, were deducted, it would bring our material investment at the end of December, 1925, down to \$32,582,983.87, making the ratio 15.3 per cent.

We also must have emergency stocks of all kinds available to protect these outlying districts because during much of the winter our main line runs through a territory where a temperature of 60 deg. below zero is not unusual.

I believe that our stock balance figures also include miscellaneous materials which would not be in the stocks of most railroads. Take for example, our hotels. These are not handled by a subsidiary company, and their stocks, therefore, go into our materials and supplies balance sheet. We operate five large city hotels and about half a dozen large summer hotels. The miscellaneous stocks, in which are included these hotel stocks and which are outside the jurisdiction of the stores department but are included in our materials and supplies balance sheet each month, amounted to about \$1,500,000 at the end of December, 1925. If we deduct that amount from the balance of \$32,582,983.87 above referred to, which is the figure after bringing our coal stocks down on an equal basis to those of United States lines, we would get a figure of \$31,082,983.87 as at December 31, 1925, or 14.6 per cent of the total operating expenses. That would put us well in line with the larger United States roads.

We also operate something over 300 sleeping cars, besides 133 parlor cars and 84 dining cars, while in many cases much of this class of equipment is owned and operated by the Pullman Company on other roads. The stock of blankets, sheets, linens, towels and all other supplies entering into the operation of these cars is included in our monthly material balance.

Our material balance also includes equipment on hand for the Canadian National Telegraphs, which is a commercial company operating the telegraph interests formerly controlled by the Great North Western Telegraph Company, Canadian Northern Telegraphs and Grand Trunk Pacific Telegraphs; and our balance also includes express material, as what was formerly the Canadian Express Company and the Canadian Northern Express Company is now operated as the Express Department of the Canadian National Railways.

I would also like to point out that our materials in Canada generally cost from 25 per cent to 35 per cent more than railroads in the United States are required to pay, owing to the fact that our duty on materials brought into this country runs from 25 per cent to 35 per cent, on top of which we have to pay 5 per cent import tax as well as the freight. In addition to coal we are compelled to buy in the United States a large amount of material required for operation and construction, such as locomotive cranes, wrecking cranes, spreaders, steel plates, tubes, tires and numerous other materials which bulk into large figures in the aggregate. The average freight and duty paid on coal imported from the United States is about \$3.00 per ton.

Our Canadian manufacturers have not the large market of the United States manufacturers and, on account of the much lower production, their costs are, therefore, considerably greater. In most cases, if they are to obtain any profit at all, they are required to take advantage of the duty. Therefore, outside of perhaps lumber, all our

materials cost much more than United States lines pay for their materials. Even if we deducted as low a figure as 10 per cent which is a very conservative one for the excess amount we require to pay for materials, that would bring our ratio down to 13 per cent.

There is another feature in connection with our investment in materials and supplies to which I would like to draw attention, and that is the number of repair shops we are required to operate. It will be remembered that the various railroads now comprising the Canadian National Railways were not brought together until 1923. Each railroad now embraced in the Canadian National Railways had its own shops, which means that we must maintain many more repair shops than would otherwise be the case. There are over 20 shops from coast to coast doing repair work. I am referring to points where repair work is done other than that usually carried on at a locomotive terminal. Some of these shops are close to each other. In Winnipeg, for example, there is a big shop at Fort Rouge, owned by the former Canadian Northern, and another one at Transcona, owned by the former National Transcontinental. These shops are about 10 miles apart and employ about 2,500 men each. The same remarks apply to other points, except to a smaller extent. Anyone who has been connected with the operation of a railroad which is owned by the government knows that, no matter how independent the management may be, once it has a shop, employing a specific number of men, established at any point, it is difficult to close it, as public pressure, apart altogether from political pressure, demands that the workmen in these various vicinities be kept employed, inasmuch as it all means business to those concerned, from the local shopkeeper up. We are, however, gradually improving the situation in this respect by the consolidation of work, and hope to continue to do so. Notwithstanding that we are required to maintain material for all these shops, our average issues in the stocks controlled by the stores department for the month of March last were 27.29 per cent. This turnover is not a bad one.

It is difficult, to my mind, to arrive at any proper conclusion in respect to the method of comparing stocks carried by various railroads on an equitable basis, as conditions on railroads vary. Some are near the source of supply, and others are a long way from it. Others have a good deal of the material they require produced on their own lines, and some railroads are required to pay freight charges on most of the material which they have to buy.

Because our lines are so far-flung and run through a wilderness for thousands of miles, a comparison cannot properly be made with our neighbors to the south. If we figure our investment in materials and supplies on a mileage basis, our showing would be low as compared with many lines. I appreciate that that is not a desirable basis for comparison, because one railroad may do a good deal more business than another and, therefore, would require more material per mile of road, but mileage must be taken into account for track, wherever it is, must be maintained, and materials and supplies of all kinds, such as rails, fuel, ties, track material, material for repairing equipment, etc., must be provided for that mileage.

I am not in any way criticising Mr. Tirrell's remarks, as in my opinion most railroads have been carrying more stock than is necessary and, in that connection, we are doing everything possible to bring our stocks down. Our warehouse stocks today are only 50 per cent of what they were in 1921, notwithstanding the fact that we have taken back into our stores a good deal of material which was formerly carried in the superintendent's line stocks.

R. C. VAUGHAN,
Vice-President, Canadian National.

Union Pacific Type Locomotive

4-12-2 design is developed from comparative studies of
2-8-8-0, two-cylinder 2-10-2, and three-cylinder
4-10-2 locomotives

THE American Locomotive Company recently delivered a 4-12-2 type locomotive to the Union Pacific which is the largest non-articulated steam motive power unit ever constructed. This locomotive, known as the Union Pacific type, was selected as a result of studies and tests made by the rail-



Top View of the Engine Truck Showing the Construction of the Centering Device

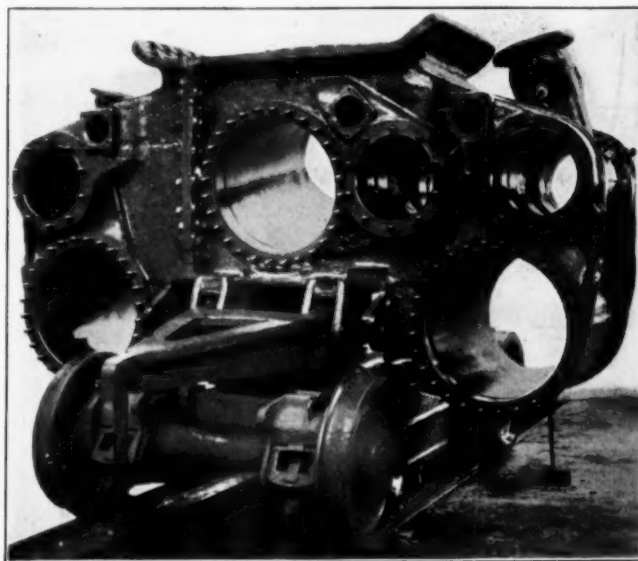
road management extending over a period of several years. These tests included an investigation of the operating costs of the 2-8-8-0 Mallet type, two-cylinder 2-10-2 type, and three-cylinder 4-10-2 type locomotives, a comparison of the principal dimensions, weights and proportions of which is given in one of the tables.

The 2-8-8-0 type locomotives were designed for service on the principal mountain grades of the Union Pacific, but during certain seasons, they were placed in road service between Green River, Wyo., and Laramie, where the maximum grade is .82 per cent. Considerable reductions were obtained in operating costs through the use of the Mallet locomotives but owing to the fact that locomotives of this type are inherently a low speed machine, they could not be used in this district during the busiest season.

Since 1917 the standard locomotive for fast freight service in the mountain districts has been the two-cylinder 2-10-2 type which has a rated tractive force of 70,450 lb. About one year ago the Union Pacific purchased a three-

cylinder 4-10-2 type locomotive (a description of which was published in the August 8, 1925, issue of the *Railway Age*, page 269), for demonstration and comparison with the 2-10-2 type.* This locomotive was built as nearly identical to the 2-10-2 type as the three-cylinder design would permit, having nearly the same weight on the drivers, the same grate area and practically the same design of boiler, and 63-in. drivers.

The comparative tests conducted with the three-cylinder 4-10-2 and the two-cylinder 2-10-2, developed that the three-cylinder locomotive could regularly handle 20



Rear View of the Cast Steel Cylinders as Assembled on the Engine Truck

per cent more tons in regular service with an expenditure of 16 per cent less fuel per 1,000 gross ton-miles. As a result, the Union Pacific conceived the idea and cooperated with the builders to design a locomotive for fast freight service capable of hauling the 2-8-8-0 tonnage and

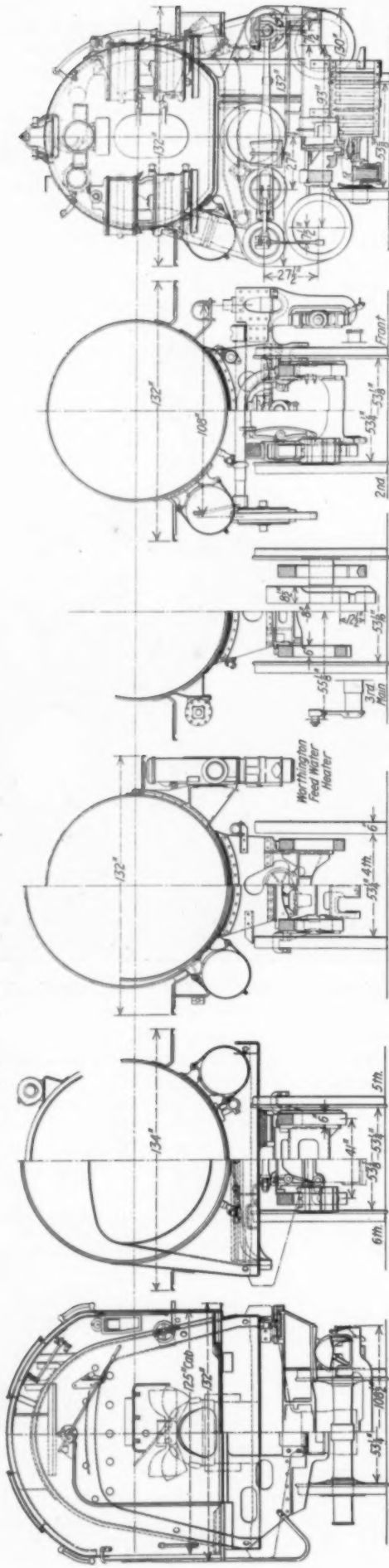
*See the June 28, 1918, *Railway Age*, page 1573, for the results of the tests of the 2-10-2 locomotive on the Union Pacific.

COMPARATIVE TABLE OF THE PRINCIPAL DIMENSIONS, WEIGHTS AND PROPORTIONS OF THE UNION PACIFIC 2-8-8-0, 2-10-2, 4-10-2 and 4-12-2 TYPE LOCOMOTIVES

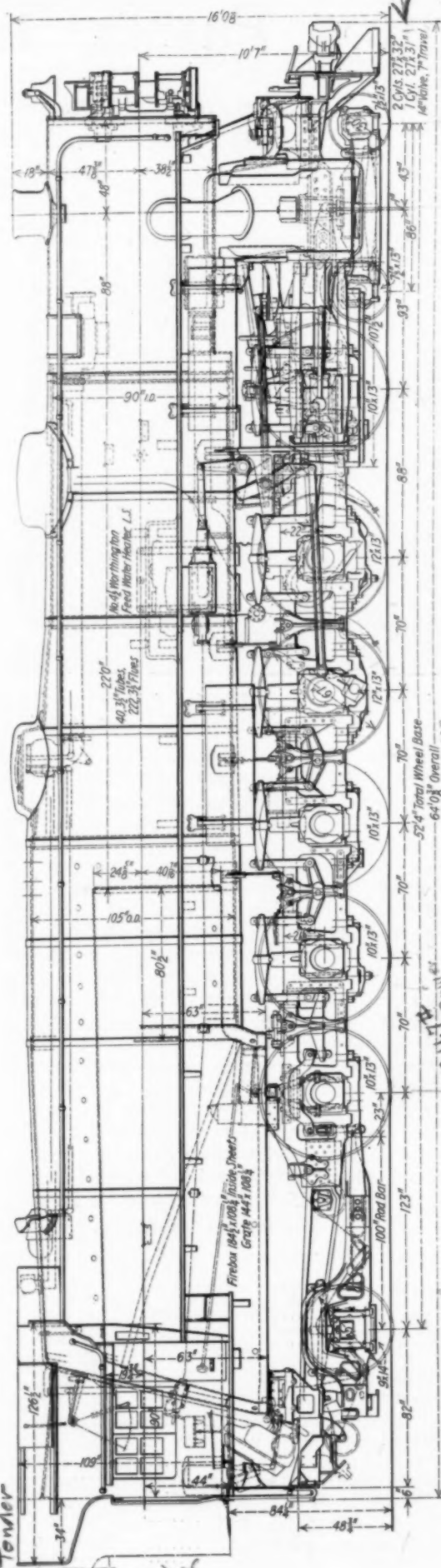
Type	2-8-8-0	2-10-2	4-10-2	4-12-2
Cylinders, diameter and stroke	H.P. 26 in. by 32 in. L.P. 41 in. by 32 in.	29½ in. by 30 in.	2-25 in. by 30 in. 1-25 in. by 28 in.	2-27 in. by 32 in. 1-27 in. by 31 in.
Weight on drivers	465,000 lb.	285,500 lb.	288,500 lb.	355,000 lb.
Total weight of engine	495,500 lb.	357,600 lb.	405,000 lb.	495,000 lb.
Length, driving wheel base	15 ft. 6 in.	22 ft. 6 in.	22 ft. 6 in.	30 ft. 8 in.
Diameter, driving wheels, outside tires	57 in.	63 in.	63 in.	67 in.
Boiler steam pressure	210 lb.	200 lb.	210 lb.	220 lb.
Grate area	88.1 sq. ft.	84 sq. ft.	84 sq. ft.	108.25 sq. ft.
Total evaporative heating surface	5,412 sq. ft.	5,152 sq. ft.	5,522 sq. ft.	5,853 sq. ft.
Comb. evaporative and superheating	6,809 sq. ft.	6,414 sq. ft.	6,897 sq. ft.	8,413 sq. ft.
Rated tractive force	Simple 123,700 lb. Compound 103,100 lb.	70,450 lb.	78,000 lb.	96,650 lb.
Cylinder horsepower (Cole)	3,136	3,136	3,547	4,329
Weight on drivers ÷ total weight engine, per cent	93.6	79.8	71.2	71.75
Weight on drivers ÷ tractive force	Simple 3.76 Compound 4.5	4.05	3.69	3.68
Tractive force ÷ comb. heat. surface	Simple 18.1 Compound 16.9	10.9	11.32	11.5
Cylinder hp. ÷ grate area		37	42.25	39.9

Length overall 102'-6 1/2"
 64'-0 3/8"
 38'-6 1/4"
 19'-3 1/8"

102'-6 1/2"
 - 19'-3 1/8"
 83'-3 3/8" & Tender Load from this pt.



600,000 Tr.
 90,000 Tilt.
 350,000 Tr.
 495,000 # Engine
 287,000 # Tender
 82,000 #
 Working Order



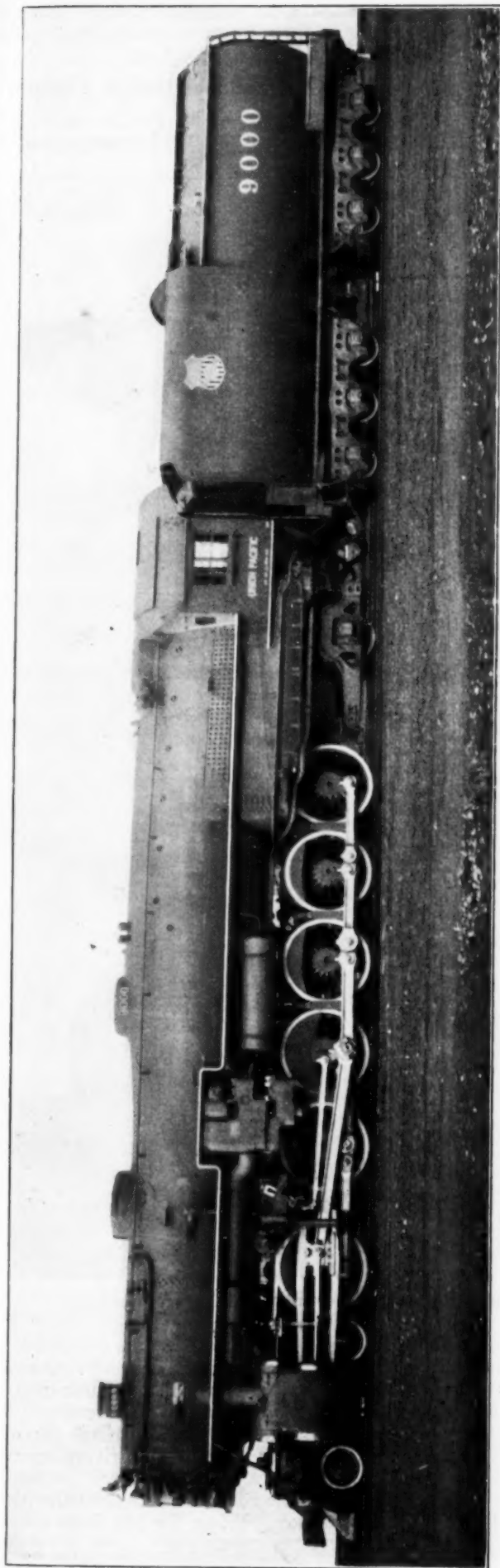
Weight on Trailer, 60,000 lb.

Weight on Drivers, 355,000 lb.

Weight on Engine Truck, 80,000 lb.

Elevation and Cross Section Drawings of the Union Pacific Type Locomotive

500' = 111 2/3'

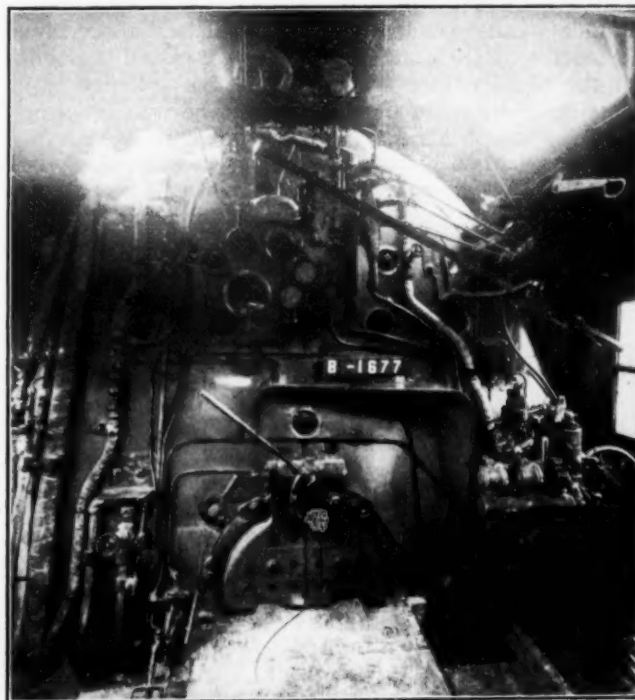


Union Pacific Type Locomotive Built by the American Locomotive Company

also of making the same speeds as made by the 2-10-2 and 4-10-2 type locomotives. In other words, it was desired to have an increase in permissible speed of from 20 m.p.h. to 40 m.p.h. and an increase in the average speed over the district of from 12 m.p.h. to better than 20 m.p.h.

The amount of power required together with a weight limit of 59,000 lb., per pair of drivers, determined the need for having six-coupled axles. Such a design was impossible on a two-cylinder locomotive having the main rods connected to a single driving axle. The three-cylinder locomotive, transmitting its power through two main driving axles, effects a better distribution of stresses over the whole frame structure. This factor, combined with the lower dynamic effects, made possible the use of six-coupled axles together with comparatively high speed and greater power. The final frame stresses are, therefore, somewhat less in the 4-12-2 type than they are on a 2-10-2 type having outside cylinders of larger dimensions.

The problem of arranging such a long wheel base as the 4-12-2 type to negotiate a 16 degree curve was



Interior View of the Cab of the Union Pacific Type Locomotive No. 9,000

solved by installing a lateral motion device at the rear as well as at the front drivers and applying a four-wheel engine truck and two-wheel trailer, the design of which allows a considerable amount of flexibility in curving. All the wheels are flanged with the exception of the No. 4 drivers which have blind tires. This arrangement permits the locomotive to traverse 16-deg. curves successfully at normal speeds. It has, however, been decided to have all the drivers flanged on future locomotives of this type.

The driving wheels of this locomotive are 67 in. in diameter which is somewhat larger than the usual diameter of drivers on locomotives designed for fast freight service, a 63-in. driver being generally accepted as about the proper diameter for such service. It was found, however, that a good crank axle design required a 67-in. driver which tended to improve the whole design of the locomotive for the work for which it was intended.

The design of the locomotive as a whole embodies

straight engineering throughout, combining a number of accepted features in a manner that has not been used before in order to obtain the characteristics desired within the specified weights and clearance limitation. The locomotive develops a rated tractive force of 96,650 lb. The boiler steam pressure is 220 lb. per sq. in. The diameter and stroke of the outside cylinders is 27 in. by 32 in. and the inside, 27 in. by 31 in., the main rods for the two outside cylinders being connected to the No. 3 drivers and the main rod from the inside cylinder to the No. 2 drivers.

The total weight of the locomotive is 495,000 lb., of which 355,000 lb. is carried on the drivers, 80,000 lb. on the engine truck and 60,000 lb. on the trailing truck. The total length of the driving wheel base is 30 ft. 8 in., but by installing lateral motion devices on the No. 1 and No. 6 drivers, the designers were able to reduce the total rigid wheel base to 17 ft. 6 in.

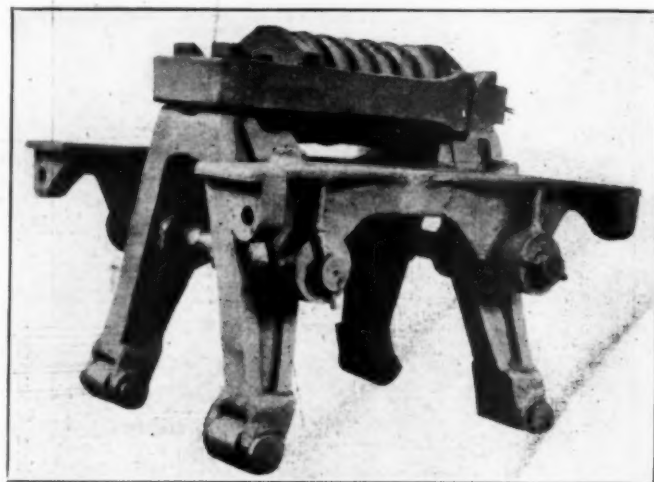
Equipped with Cast Steel Cylinders

One of the illustrations shows an assembly of the engine truck, front equalizer and cylinders. The cylinders are of cast steel, this being the first application of cylinders constructed of this material to a three-cylinder locomotive. The outside cylinders are placed horizontally in the usual manner while the center cylinder is built sloping at an angle of $9\frac{1}{2}$ deg. to the horizontal. The steam pipe inlet, shown on the right hand side, supplies steam to both the right and center cylinders. It is designed to deflect any water which might be present in the incoming steam away from the center cylinder and into the right hand cylinder, from which the water can be more easily drained. The cylinder casting is in two sections and is joined at the left of the center cylinder, as shown

operated by a Walschaert gear with the Gresley transverse lever arrangement for three-cylinder locomotives. The steam pipe is enclosed in a Flextite* casing.

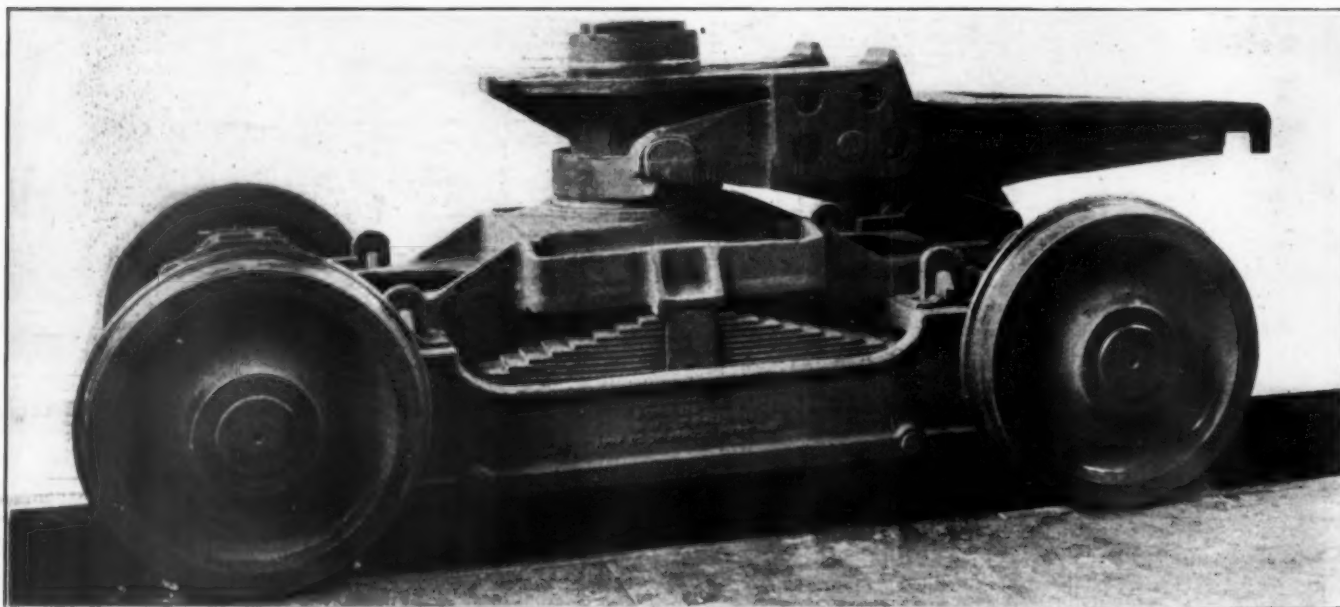
Design of Running Gear Includes Unique Features

The design of the running gear involved a number of new problems owing to the fact that the locomotive would



The Lateral Motion Device Applied to the Front and Rear Axles

be required to traverse 16 deg. curves on six pairs of driving wheels. This required an unusual amount of flexibility in the long driving wheel base but, as stated in a preceding paragraph, the designers were able to ob-



View of the Engine Truck Showing the Method of Assembling the Center Casting and Front Equalizer

tain a rigid wheel base of 17 ft. 6 in. by the use of lateral motion driving boxes applied to the front and rear axles. The lateral motion device, shown in an illustration, is adjustable to suit speed or curvature requirements, the resistance increasing with the amount of lateral displacement. It imposes no excess load on the driving springs and uses a class G A.R.A. car spring to resist the lateral motion of the drivers. The rollers bear against the inner surface of the driving box. When the box is in normal

Valves

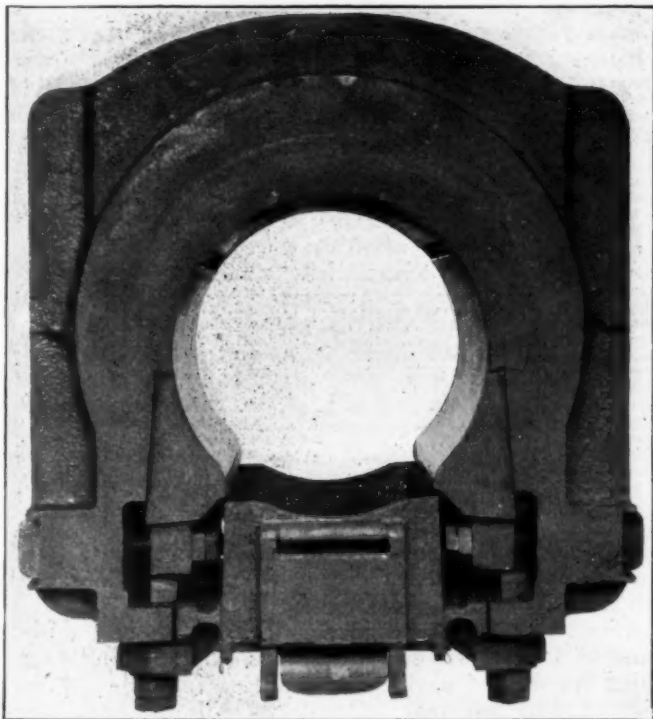
The valves are of the piston type, size 14 in., and have a maximum travel of seven inches. A single ported valve is used having eight rings, which is the Union Pacific standard, instead of the usual four rings. The valves are

*See the *Railway Age* of May 1, 1926, for a description of this casing.

position in the frame, the rollers are clear of the inner surface which facilitates the work of replacement.

Shown in one of the illustrations is the type of driving box applied to the main and crank axles. It is equipped with supplemented bearings below the center line of the axle for the purpose of reducing side wear on the journals. The grease lubricant used in the driving boxes on the crank axles must be applied from the bottom. For this reason, the cellar is made with a drop bottom and the pedestal binder is arched down at the center to allow for the easy renewal of the grease cake. The cellar forms a fixed spreader in the box to prevent any pinching of the sides of the driving box as well as an additional support for the supplemented bearings.

With the exception that the locomotive has an additional pair of drivers, as compared with a 2-10-2 type, and three cylinders, which requires a crank axle on the No. 2 pair of drivers, the side rod design follows the usual practice, floating bushings being used on the main



Design of Driving Box Used on the Main and Crank Axles

rod bearings. As shown in the erecting drawing, the driving, engine truck and trailing truck springs are made with a reverse camber, which is also a standard of the Union Pacific.

One of the principal features in the design of the engine truck, shown in two of the illustrations, is the elimination of bolt fastenings. The frame is comprised of three steel castings, two journal box or side frame castings and a squaring frame. Equalization has been secured without the use of equalizers of the usual design. The pedestals have been designed to eliminate wearing surfaces. Hinged lids are provided at the ends of the journal box castings, as shown in one of the illustrations, which permit the packing and lubricating of the cellars without necessitating their removal. The wheel base of 86 in. permits the use of long, flexible, easy riding springs. The journal bearings rest on an adjustable wedge similar to tender journal bearings which insures an equalized journal bearing pressure over its entire surface and thus tends to reduce trouble from the journals running hot.

The centering device, shown in one of the engine truck illustrations, permits a swing of $6\frac{1}{4}$ in. to each side of center. Referring to the illustration, the rollers rest in the Vees of the two blocks in the squaring frame casting and the Vee block shown at the right sets on the rollers. Each of the two rollers is provided with gears which mesh with the gear teeth at the end of each Vee. The

TABLE OF DIMENSIONS, WEIGHTS AND PROPORTIONS OF THE UNION PACIFIC TYPE LOCOMOTIVE

Railroad	Union Pacific
Builder	American Locomotive Co.
Type of locomotive.....	4-12-2
Service	Fast freight
Cylinders, diameter and stroke.....	2-27 in. by 32 in. 1-27 in. by 31 in.
Valve gear, type.....	Walschaert-Gresley
Valves, piston type, size.....	14 in.
Maximum travel.....	7 in.
Outside lap.....	$1\frac{1}{4}$ in.
Exhaust clearance.....	$\frac{1}{8}$ in.
Lead in full gear.....	$\frac{1}{16}$ in.
Weights in working order:	
On drivers.....	355,000 lb.
On front truck.....	80,000 lb.
On trailing truck.....	60,000 lb.
Total engine.....	495,000 lb.
Tender	287,000 lb.
Wheel bases:	
Driving	30 ft. 8 in.
Rigid	17 ft. 6 in.
Total engine.....	52 ft. 4 in.
Total engine and tender.....	91 ft. $6\frac{1}{2}$ in.
Wheels, diameter outside tires:	
Driving	67 in.
Front truck.....	30 in.
Trailing truck.....	45 in.
Journals, diameter and length:	
Driving, numbers 2 and 3.....	12 in. by 13 in.
Driving, others.....	10 in. by 13 in.
Front truck.....	$7\frac{1}{2}$ in. by 13 in.
Trailing truck.....	9 in. by 14 in.
Boiler:	
Type	Wagon top
Steam pressure.....	220 lb.
Fuel	Semi-bituminous
Diameter, first ring, inside.....	90 in.
Combustion chamber, length.....	$80\frac{1}{2}$ in.
Tubes, number and diameter.....	40- $3\frac{1}{2}$ in.
Flues, number and diameter.....	222- $3\frac{1}{2}$ in.
Length over tube sheets.....	22 ft.
Grate area.....	108.25 sq. ft.
Heating surfaces:	
Firebox and comb. chamber.....	529 sq. ft.
Arch tubes.....	62 sq. ft.
Tubes and flues.....	5,262 sq. ft.
Total evaporative.....	5,853 sq. ft.
Superheating	2,560 sq. ft.
Comb. evaporative and superheating.....	8,413 sq. ft.
Special equipment:	
Superheater	Type E
Feedwater heater.....	Worthington
Stoker	Elvin
Tender:	
Water capacity.....	15,000 gal.
Fuel capacity.....	42,000 lb.
Journals, diameter and length.....	6 in. by 11 in.
General data estimated:	
Rated tractive force.....	96,650 lb.
Cylinder horsepower (Cole).....	4,329
Speed at 1,000 ft. piston speed.....	37.6 m.p.h.
Factor of adhesion.....	3.66
Curvature	16 deg.
Weight proportions:	
Weight on drivers ÷ total weight engine, per cen.....	71.75
Weight on drivers ÷ tractive force.....	3.68
Total weight engine ÷ cylinder hp.....	114.3
Total weight engine ÷ total heating surface.....	58.8
Boiler proportions:	
Comb. heating surface ÷ cylinder hp.....	1.95
Tractive force ÷ combined heat. surface.....	11.5
Tractive force X diam. drivers ÷ comb. heat. surface	769.7
Cylinder hp. ÷ grate area.....	39.9
Firebox heat. surface ÷ grate area.....	4.89
Firebox heat. surface, per cent of evap. heat. surface	6.28
Comb. heat. surface ÷ grate area.....	77.7

latter extend only to the top of the Vee which limits the amount of movement of the rollers. The center pin extends down through the Vee blocks from the center casting to which the front equalizer is attached, as shown in the other illustration of the engine truck.

The boiler is of the wagon type and carries a pressure of 220 lb. per sq. in. The firebox total heating surface, including the combustion chamber, is 529 sq. ft. The heating surface of the five arch tubes is 62 sq. ft. making a total fire heating surface of 591 sq. ft. The area of the grates is 108.25 sq. ft. The boiler has 40 tubes, $3\frac{1}{2}$ in. in diameter and 222 flues, also $3\frac{1}{2}$ in. in diameter,

with a length over the tube sheets of 22 ft. The total evaporating surface is 5,853 sq. ft. It is equipped with a Type E superheater which provides a superheating surface of 2,560 sq. ft., and a Worthington feedwater heater having a capacity of 10,000 gal. per hour.

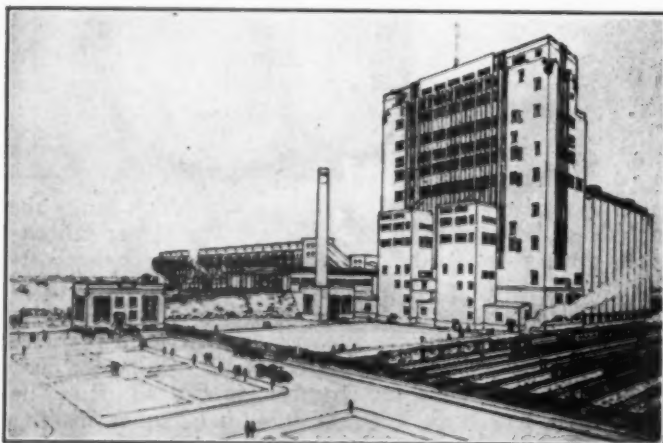
The design of the boiler presented a considerable problem. The builders were limited to an axle load of 60,000 lb. and it was also desired to keep the total weight of the locomotive as low as possible. To secure a firebox to burn semi-bituminous coal it was necessary to have firebox volume combined with ample length of flameway and depth of firebox. Both volume and length of flameway were secured by a combination of the Gaines wall and internal combustion chamber. Previous locomotives equipped with the Gaines wall never had sufficient depth from the crown to the top of the grate, but a satisfactory depth was obtained in this case by allowing the rear driving wheel to extend up between the inside of the throat and the front of the Gaines wall. It was also desired to retain the same length of tubes, 22 ft., as used on the Union Pacific's other locomotives, but while this seemingly gives a relatively short tube for a boiler of this size, the long distance from the front tube sheet to the cylinder center should in turn improve the draft conditions in the smoke box by equalizing the pull on the upper and lower flues. The dome is the largest ever built by the American Locomotive Company and the firebox is the largest to which a Gaines wall has been applied.

The air compressors are located at the front of the smoke box. This arrangement together with the concealed piping gives the locomotive an unusually smooth appearance. The 67-in. drivers permit the use of a straight axle on the front drivers instead of a bent axle commonly applied to three-cylinder locomotives to clear the inside main rod. Other features in the design are the unusual length of the crown sheet, 241 11/16 in., and the saving in weight, approximately 5,000 lb., through the use of cast steel cylinders.

This locomotive was received on the rails of the Union Pacific on April 9, when it was immediately set up and placed in regular service. Since that time it has fully demonstrated that the traction, speed and fuel economy are in excess of the predicted characteristics calculated from the design.

The Tender

The tender is carried on two six-wheel Commonwealth trucks equipped with 6-in. by 11-in. journals and 33-in. rolled steel wheels. It has a cylindrical tank of 15,000 gal. capacity. The capacity of the coal bunker is 42,000 lb.



Reading's New \$4,000,000 Grain Terminal at Port Richmond, Philadelphia

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended May 1 amounted to 995,641 cars, an increase of 11,568 cars as compared with the corresponding week of last year and an increase of 82,091 cars as compared with 1924. There were increases as compared with last year in all districts except the Northwestern, in which the heavy ore movement has not yet begun, and in all classes of commodities except forest products and ore. The largest increase was shown in the loading of miscellaneous freight, which was 27,502 cars more than in the corresponding week last year, and in coal, which showed a gain of 14,873 cars. For the first eighteen weeks of 1926 the total loading has amounted to 16,777,076 cars, an increase of 1.7 per cent as compared with last year, and the heaviest loading for the period on record. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

REVENUE FREIGHT CAR LOADING WEEK ENDED SATURDAY, MAY 1, 1926.

Districts	1926	1925	1924
Eastern	245,823	236,806	221,727
Allegheny	206,269	201,208	187,472
Pocahontas	51,322	45,835	36,981
Southern	152,057	148,416	132,282
Northwestern	124,691	150,889	140,556
Central Western	138,586	128,288	134,811
Southwestern	76,893	72,631	59,721
Total Western Districts	340,170	351,808	335,088
Total All Roads	995,641	984,073	913,550
Commodities			
Grain and Grain Products	38,016	36,068	43,368
Live Stock	31,856	30,460	32,067
Coal	165,627	150,754	127,188
Coke	12,122	10,117	10,003
Forest Products	77,363	78,438	75,568
Ore	21,060	59,143	43,248
Mdse. L.C.L.	263,465	260,463	249,773
Miscellaneous	386,132	358,630	332,335
May 1	995,641	984,073	913,550
April 24	973,304	961,186	878,387
April 17	964,935	923,844	876,916
April 10	929,506	918,400	880,937
April 3	928,092	923,400	861,990
Cumulative total 18 weeks	16,777,076	16,493,312	15,999,791

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended May 1 showed a decline from the previous week of 154 cars. Grain was lighter by 759 cars, pulpwood declined 341 cars, coal increased 513 cars and miscellaneous freight was heavier by 382 cars. Owing to the later opening of navigation grain loading was 507 cars lighter than last year. Compared with the same week last year total loadings were heavier by 4,463 cars.

Commodities	Total for Canada			Cumulative totals to date	
	May 1, 1926	Apr. 24, 1926	May 2, 1925	1926	1925
Grain and grain products...	5,499	6,258	6,006	112,482	108,406
Live stock.....	1,952	2,057	2,245	35,022	38,286
Coal.....	3,713	3,200	1,975	74,566	71,510
Coke.....	385	347	281	7,755	5,160
Lumber.....	3,734	3,635	3,585	56,521	53,338
Pulp wood.....	1,984	2,325	1,771	60,581	60,635
Pulp and paper.....	2,478	2,380	2,016	44,069	36,427
Other forest products.....	3,177	3,361	2,749	60,183	53,009
Ore.....	1,506	1,389	1,155	24,117	20,114
Merchandise, L. C. L.....	17,362	17,374	16,094	261,550	249,494
Miscellaneous.....	14,077	13,695	12,527	198,355	180,083
Total cars loaded.....	55,867	56,021	50,404	935,211	876,462
Total cars received from connections.....	37,812	39,440	32,760	636,278	573,71

RATES ON ANTHRACITE coal from Pennsylvania to points in Iowa have been found unreasonable by the Interstate Commerce Commission to the extent that they exceed a scale prescribed in the report ranging from \$6.81 to \$8.50 per net ton in place of present rates ranging from \$7.20 to \$8.95. The proposed restriction of the proportional rates on anthracite from the Niagara frontier to East Burlington, Ill., via the New York, Chicago & St. Louis and its western connections, so as not to apply on traffic destined to Burlington, Ia., was found justified.

Railroads Are Still Progressing*

Plant developing intensively—Automobile effect not essentially detrimental—Big improvement in fuel economy

By A. E. Clift

Senior Vice-President, Illinois Central System

YOUR great organization, with more than twelve hundred members representing nearly every important railway system in the world and with a record of accomplishment that an association of much longer history would be proud to own, was founded as recently as 1908. Chicago is to be congratulated on being the birthplace of this worthy organization, and you gentlemen are to be congratulated on the substantial progress it has made and on the wisdom and vision of those of your number who have directed its affairs and brought it to a position of such commanding influence within so short a period.

Remarkable things have taken place in the world since the advent of the steam locomotive. The continents of Europe and North America, in particular, have witnessed a development far greater during this last century than took place in all the centuries that went before. The progress of the world in the last one hundred years has been an indirect result—not of the railroad, for roadways of rail were in use more than three centuries ago—but of the steam locomotives. As the automobile has transformed our main highways from ruts and sloughs and mud-holes into the smooth-surfaced pavements of today so the steam locomotive has been the important factor in the development of our modern railroads. Probably no other one invention has had such a profound influence upon mankind and such a stimulating effect upon human progress.

There is approximately one mile of railroad for every 75 square miles of land area on the globe or for every 2,400 members of the human race. Our own nation, youthful as it is in comparison with the countries of the Eastern Hemisphere, embraces 250,000 miles of first track and 415,000 miles of all track. With only one-sixteenth of the world's population and only one-eighteenth of the world's land area, we have in this country more than one-third of the total railway mileage of the world. We have one mile of railroad for every 440 of our population and for every 12 square miles of land area.

The railroads are a gigantic industry in themselves. They purchase from the other industries of the country fuel, materials and supplies costing around one and three-quarter billion dollars a year. They pay out more than three billion dollars annually in wages. These large sums of money, passing into channels of trade and commerce, are factors of great importance in the maintenance of business activity. They furnish employment to hundreds of thousands of workmen; they turn many of the wheels of the nation's industries; they are passed on and on throughout the country's economic structure, until their direct and indirect benefits are felt by all persons.

Our railroads are still young and growing, in keeping with the youthfulness of our nation. They are not only adequate for present needs; they are capable of expansion

to perform far greater service than can be provided with present facilities.

Railroad Capacity Increasing Intensively

In the early stages of railway development the growth of the railway plant was measured largely by the extension of mileage. But as time went on and the country settled up, the need was not so much for additional mileage as it was for increased facilities in the territory already occupied. Railway development in recent years, therefore, has consisted more largely of increasing the capacity and efficiency of mileage already in existence through the construction of second and other additional main tracks, the building of sidings and yards, the placing of heavier ballast, the laying of heavier rail, the reduction of grades, the elimination of curves, the installation of signal and other safety devices, the construction of more substantial and more durable bridges and structures, the enlargement of shop facilities and the purchase of more powerful and more efficient locomotives and improved passenger and freight equipment.

An indication of the intensive development of the railway plant is the record of what has happened to miles of road and miles of all track in the 10-year period ended December 31, 1924, the latest year for which complete figures are available. In that period, as a result of some lines being abandoned, the mileage of road owned decreased 3,786 miles, or more than the entire first-track mileage of some highly important railway systems. In the same period, however, the mileage of all railway track, including second, third and other main tracks, yard tracks and sidings, increased 23,958 miles, or more than the entire first track railway mileage in New York, New Jersey and Pennsylvania combined. In other words, while the mileage of road owned was falling off about 1½ per cent in 10 years, the mileage of all track, which is more nearly a measure of total railway capacity, was increasing about 6¼ per cent.

In the four years ended December 31, 1925, the railroads of the United States installed more than 10,000 new locomotives, 9,300 new passenger cars and 619,000 new freight cars, replacing old equipment with new equipment that is bigger and better in every way and making definite advances in carrying capacity. In all, the railroads spent an average of more than three-quarters of a billion dollars a year during the last four years in improving and enlarging their facilities.

A Splendid Safety Record

The railroads have been making progress in the reduction of accidents and in the careful handling of freight. In 1920 they paid out approximately \$220,000,000 for loss and damage claims, injuries to persons and insurance. In 1923 this was reduced approximately 50 per cent, to \$112,000,000, and in 1924 to \$108,000,000. Where these items represented 3.6 cents out of every dollar of total revenue in 1920, they represented only 1.8 cents in 1923

*Abstract of the opening address before the eighteenth annual meeting of the International Railway Fuel Association, at Chicago, May 11, 1926.

and 1924. This saving was due largely to increased diligence on the part of railway employees in safeguarding life and property. It is an indication of the increased efficiency which characterizes present-day railway operations.

The railroads are becoming constantly safer for those who work on them and for those who ride their trains. Reports of railway accidents were first compiled on a national basis in 1888. In that year 315 passengers and 2,070 employees were killed. In 1925, 175 passengers and 1,523 employees were killed. This is a reduction of 45 per cent in passenger fatalities and a reduction of 26 per cent in employee fatalities, notwithstanding the fact that since 1888 railway passenger traffic has more than trebled, railway freight traffic has increased almost six times, and the number of railway employees is two and one-half times greater than it was then.

Highway crossing accidents, which are not included in the foregoing figures, have come in recent years to be the most prolific cause of fatalities on the railroads. This, of course, is due to the growing use of automobiles. However, the persistent efforts of the railroads to prevent such accidents through the education of the public and the vigilance of their employees are bearing fruit. In 1917 there were 22 fatalities in automobile accidents at grade crossings for every 100,000 automobiles in use, and in 1925 there were only 11 for every 100,000 automobiles in use, a relative decrease of 50 per cent. Because of the vastly greater number of automobiles in use in 1925, of course, the total number of deaths due to automobile accidents at grade crossings in 1925 was considerably greater than in 1917, and we must not let down in our activities.

There are 245,000 highway grade crossings on the principal railroads of the country. Some of these are being eliminated from time to time, but to do away with them all through the construction of subways and viaducts would require a generation of time and the expenditure of approximately 20 billion dollars, and that, of course, is prohibitive. The solution of the grade crossing problem must be found elsewhere. The best results will come out of our educational efforts. The railroads have taken the leadership in this safety program, and they should have thorough support.

The Automobile a Benefit to the Railroads

One of the comparatively recent developments in transportation is the tremendous increase in the use of motor vehicles on the highways. Railway progress has continued at a substantial rate in recent years, but nevertheless the increased use of automobiles and motor trucks has had its effect upon many of our railroads. In some respects that effect has been detrimental and in some respects beneficial, but if we could weigh the benefits against the detriments, I believe we should find that the railroads have gained a great deal more than they have lost from the development of highway transportation.

Long-distance travel by railroad has continued to increase, but short-distance travel has fallen off substantially, chiefly because of the convenience of the private automobile. It has become necessary for the railroads to discontinue the operation of many local passenger trains because of declining patronage.

As a connecting link between the railroads and off-line communities, the motor truck has been an aid rather than a detriment to the railroads, and the same is true of passenger-carrying motor vehicles. Then, too, there is the vast amount of traffic which the railroads have derived from the handling of automobiles and parts, gasoline, road-building machinery and so on. In that respect the development of highway transportation has helped the railroads.

The use of automobiles has created a new and gigantic industry and has given new strength to our entire economic structure. The automobile and the highway have helped tremendously to transform the living conditions, the thought, the culture and the very lives of the American people. That is what improved transportation always does. The development of transportation in its various forms has furnished energy for the progress of civilization throughout the centuries, and the rapid development of highway transportation during the last 25 years has been an extension of that progress.

The motor vehicle, of course, can never take the place of the railroad. Motor trucks will handle more or less short-haul, package freight, but they will never handle any considerable amount of long-haul, bulky freight, and the latter constitutes by far the larger part of the nation's commerce. The railroads are wholesale dealers in transportation; motor trucks are the retailers. The average carload of freight on the Illinois Central System consists of about 36 tons. It would require more than seven trucks loaded to five tons capacity each to transport our average carload, and it would require 360 motor trucks loaded to five tons capacity each and 360 drivers to transport the tonnage handled in a 50-car freight train. The total carrying capacity of the 2,400,000 motor trucks registered last year amounts to only 2.8 per cent of the carrying capacity of the freight cars owned by the Class I railroads of the United States.

The problem, as we see it, is one of co-ordinating the efforts of the two highly important branches of transportation. Both are performing essential service and there is plenty of room for both. Where they compete, adjustment is needed. The fixing of rates, the taxation of highway common carriers in proportion to their use of the highways and other matters of like nature must in time be equitably adjusted so the railroads and motor vehicles operating as common carriers will be on equal footing.

In the meantime, it is to the advantage of the railroads to encourage the continued development of the highways and the increased use of automobiles. It is generally recognized that the railroads form, and will continue to form, the backbone of the American transportation system, producing a service that the country cannot get along without.

Developing Public Understanding

No one will deny that the railroads have made mistakes in the past. One of the costliest of their mistakes was their failure to discuss their affairs freely with their patrons. The well-being of the railroads under private management, private ownership, private financing and public regulation is dependent on winning and holding the confidence and good will of the public.

The Illinois Central System has been active in educational work of this character. For nearly six years we have been publishing each month in the newspapers on our lines a statement discussing some phase of railway management and operation, and these statements, as many of you know, have had an excellent effect in putting the railroads before the people of our territory in an understandable way. We have discussed our affairs with the utmost frankness and candor and sought to correct such erroneous ideas and impressions as have been formed in the public mind regarding railway affairs. We have cultivated the friendship and enlisted the co-operation of our patrons and given them a better understanding and appreciation of the problems and conditions with which the railroads are confronted. We have taken the mystery out of railroading for them. There is, after all, no secret in the railway business which ought to be withheld from the public.

Satisfactory transportation service is ahead of all other considerations in railway operation. Service is the foundation on which must be built the structure of good will. Words must be backed up by deeds. Educational efforts that are not backed up by good service are worse than useless. However, too many persons accept good service as a commonplace. It is difficult for them to visualize the vast expenditures and painstaking efforts which are necessary to produce good service. One of our duties is to tell them about these things.

The value of such a straightforward policy cannot be measured in dollars, but that it has been decidedly worth while is evident in many ways. Distrust, suspicion and opposition have disappeared, and in their place have come co-operation, friendliness and sympathetic understanding. As the result of work such as this the country over, confidence in private management was never greater than it is today. And with renewed confidence has come the gradual improvement of credit, which is so essential to the continued expansion and efficient operation of the railroads.

Improvements in Service and Efficiency

The last few years have witnessed a marked improvement in the service rendered by the railroads. The railroads today are performing more satisfactory service than ever before. Service is not only better, but cheaper. Measured in dollars and cents, rates at times in the past have been lower than they are now, but measured in terms of the service they buy and in terms of what money will purchase of goods and services generally, I believe rates never before have been as low as they are today.

The operation of heavier freight trains has made possible a great increase in freight traffic handled without a correspondingly great increase in the number of freight trains operated. Railway employment was steadier in 1925 than in previous years. The variation between extremes in 1925 was 95,000 men, compared with a variation of 190,000 men in 1923. The railroads recognize the important bearing which stabilized employment has upon business generally, and they are making progress in holding fluctuations of railway employment to the minimum.

That the railroads are handling their freight with greater care than ever before is attested by the fact that claims paid for loss or damage declined nearly 20 per cent in 1925, compared with 1924. Claim payments on account of delayed shipments in 1925 were nearly 43 per cent less than in 1924.

In 1925 new records were established in freight car-miles per car day, in net tons per train, in gross tons per train, in freight cars per train, in freight train miles per hour in gross ton-miles per train hour, in net ton-miles per train hour and in fuel consumption per unit of both freight and passenger service.

What the International Railway

Fuel Association Has Done

Fuel on the railroads is going farther today than ever before. Fuel consumption per unit of freight service was reduced 6.5 per cent from 1924 to 1925 and 19.3 per cent from 1920 to 1925. Fuel consumption per unit of passenger service was reduced 5.3 per cent from 1924 to 1925 and 14.3 per cent from 1920 to 1925.

On the basis of the traffic handled in 1925, the saving of fuel consumed in freight and passenger service in 1925 amounted to 24,467,000 tons as compared with 1920 and 7,302,000 tons as compared with 1924. The value of this fuel at 1925 prices was \$73,400,000 for the savings under 1920 and \$21,900,000 for the savings under 1924. These economies were due very largely to the more efficient and more scientific use of fuel.

The International Railway Fuel Association has been doing highly commendable work in the promotion of operating efficiency by its campaign for the economical use of fuel. Fuel is one of the largest items of railway purchases. The railroads consume annually more than 100,000,000 tons of coal. The locomotive fuel bill, consisting principally of coal, amounted to \$437,000,000 in 1924, compared with \$675,000,000 in 1920, a decrease of \$238,000,000. Part of this reduction in cost is due to the lower price of coal, but a very substantial part of it is due to fuel economies that have been brought about by the railroads whose fuel experts are members of the International Railway Fuel Association.

I am proud to belong to the International Railway Fuel Association. It has made a splendid record in the comparatively few years the association has been in existence, and I look for it to continue to occupy an important place in American railroading.

Supplemental Report on Southern Class Rates

WASHINGTON, D. C.

THE Interstate Commerce Commission on May 6 issued a supplemental report by Chairman Eastman on its Southern Class Rate Investigation, modifying in many particulars the findings of its previous report of July 7, 19 and 25, in which it had prescribed a general revision of class rates between points in southern territory and between points in that territory and official classification territory. This is a general investigation instituted by the commission on its own motion in 1922 for the purpose of determining whether the rates and ratings under investigation are "unreasonable, or are unduly prejudicial to or unduly preferential of particular localities, persons or descriptions of traffic."

The rates involved are mainly stated in a series of tables given in the appendix to the report, stating reasonable maximum rates for various distances for the different numbered classes of freight, and contain both increases and decreases. The scales prescribed in the second report differ in many respects from those in the former report after consideration of the protests filed by the southern roads and others, criticizing the former findings. The former rates were not ordered into effect and the southern roads objected to them on the ground that they would result in a reduction of their revenues. Hearings in the case were begun in May, 1922, and 15,000 pages of testimony were taken.

"Following the course taken in the original report," the report says, "we shall enter no order at this time requiring the establishment of the rates prescribed, pending advice from the carriers within 20 days of the service of this report as to whether they are now prepared to accept the modified findings herein made and proceed at once in a spirit of co-operation with the work of carrying them into effect."

While the discussion herein covers various of the points included in the original report, many of the findings there made and much of the discussion there contained has not been touched upon or modified herein. In all such cases it should be understood that the findings and discussion of the original report remain in full force and effect.

As was stated in the original report, the rate adjustment here involved is exceedingly complex and extensive, particularly that on interterritorial traffic. In such cases it is difficult to foresee and provide in advance for all the matters of detail which will be encountered and require consideration in the preparation of the rates for actual publication in tariff form. When orders are entered under such circumstances, it is frequently necessary sub-

sequently to modify them to provide for such matters of detail which could be handled to better advantage and with minimum delay in informal conference between representatives of the shippers, carriers, and commission.

Most of the criticisms of our findings are traceable to difficulties created by certain conditions which from the beginning have greatly complicated the problems encountered in this proceeding.

The class rates of official territory are much lower in level than the class rates of southern territory. While transportation conditions justify some difference in level, they do not in themselves justify the difference which exists. But the situation is one that cannot be radically changed without a complete reorganization of the rate structures, including both class and commodity rates, of both territories. In official territory much traffic moves on class rates or classification exceptions which in southern territory moves on commodity rates. The proportion of carload traffic which moves on class rates or classification exceptions is considerably greater in the former than in the latter. If the rates are compared on which the bulk of the traffic moves in each territory, generally speaking no such wide difference in level will be found as exists in the case of the class rates. If the class rates in southern territory were reduced to something like the level which prevails in official territory, it would be necessary to transfer much traffic from a commodity-rate to a class-rate basis. A reverse process would be necessary if the class rates in official territory were raised to something like the southern territory level. Neither one of these steps is practicable in this proceeding. The class rates of the two territories are in reality based upon two differing theories of freight-rate construction. The resulting wide difference in the level of the two sets of rates, therefore, has been in this proceeding a complicating factor which could not be avoided. The difficulties which it creates have been particularly troublesome in the fixing of class rates between the two territories.

Referring to the principal intraterritorial scale the report says in part:

An inspection of the new scale indicates that, as compared with the scale in Appendix K of the original report, the rates for distances up to 35 miles have been slightly increased, while those for distances from 41 to 340 miles have been reduced. Such loss in revenue as may be involved in these reductions will in some measure be offset by the increases in the rates for the shortest hauls, and also by the change in the method of computing distances for the application of the scale and the other minor modifications of our findings hereinafter set forth. It should be borne in mind, as the carriers have themselves pointed out, that we are under no obligation in this proceeding to maintain revenues from class rates at precisely the existing level. Our only obligation is to prescribe rates which are reasonable and otherwise lawful. The changes now made in our original findings have been made with that obligation in view. The intraterritorial rates originally prescribed would, in our judgment, have resulted in some aggregate increase in revenue, if uniformly applied interstate and intrastate. From the rates now prescribed we are confident that the carriers will suffer no adverse financial effect of consequence. However, should a situation arise for any reason under which the carriers are not earning the fair return prescribed by section 15a of the interstate commerce act, the provisions of that section may be invoked.

The carriers have had much to say about the inadvisability or unwisdom of what they term a rigid system of distance rates. The fact is that we have prescribed no such rigid system. We have not attempted to fix minimum rates, but have merely used a distance scale as the measure of maximum reasonable rates. In the application of this maximum measure we have specifically permitted the grouping of stations which constitute a single industrial community, and we have also approved the use of territorial groups of moderate extent except in the case of the shorter hauls. We further stated, at the same page, that "the carriers may publish lower rates than the scale provides, to the extent that this can be done without creating undue preference and prejudice, or by common consent of the shippers and communities affected." We further indicated how it may be determined whether such publication of lower rates will or will not result in undue preference and prejudice.

In contending that we should have approved their so-called "related adjustment," the carriers say that their proposals were the work of traffic executives with years of experience and a thorough knowledge of the southern rate situation and that they were designed with "respect for the traditional policy of the preservation of competition as well as for the laws of restraint." In fact, the plan which they submitted was incomplete in a number of important respects, notably, so far as intraterritorial rates are concerned, in the case of rates to and from points in South Carolina. Moreover, as pointed out in the original report, the competitive situation which prevailed in the early days of

railroading in southern territory and resulted in the establishment of the basing-point system of rate construction and various more or less definite groupings, has materially changed. The basing-point system has become obsolete, due to the practical elimination of the interior waterway competition out of which it largely arose, and because of the changed railroad competitive situation and changes in the fourth section of the interstate commerce act and its administration. The plan proposed by the carriers abandoned all the fourth-section departures brought about by the basing-point system, but retained the impress of that system in the form of relatively low rates to and from certain important points, which rates were not defended of record by any showing of controlling competitive conditions, transportation or commercial, now existing.

Admitting that the adjustment was "in no proper sense an unwholesome one," under the interterritorial rate situation which has hitherto prevailed, clearly the underlying reason for that adjustment will cease to exist upon the establishment of the new "overhead" rates herein prescribed to and from central territory.

Regarding the interterritorial rates the report says:

The objections made to our findings with respect to the interterritorial rates are much more numerous and detailed than those which have to do with the intraterritorial rates. Speaking generally, the carriers in both territories object to the interterritorial rates because of the large revenue reductions which they believe would result and because of the fourth-section violations and inconsistencies in the rate structure which they say would be brought about. Opinion among shippers is divided. Those in official territory and in that portion of the South which borders on official territory quite generally approve our findings with respect to the interterritorial rates, or at least the intent of those findings. Other shippers in southern territory, although there are exceptions to this rule, quite generally disapprove of these findings, more particularly on the ground that they would give northern manufacturers an undue advantage over southern manufacturers in shipping goods to southern destinations. Interests at Ohio River crossings, other than Evansville, and some of the Virginia cities sympathize with, and to some extent go further than, the carriers in their opposition to reductions in interterritorial rates, for the reasons indicated in the original report.

Upon reconsideration of the problem and all that has been said for and against the interterritorial rates prescribed in the original report, we are persuaded that the differential basis set forth in Appendix P should for the present be abandoned. We are also persuaded that any attempt at a final solution of the interterritorial rate problem, at least so far as southern border territory is concerned, should be postponed pending the outcome of the Eastern Class Rate Investigation. The entire interterritorial adjustment will therefore be held for such further consideration of all the issues relating thereto as may seem appropriate, after further hearings, following our decision in that investigation.

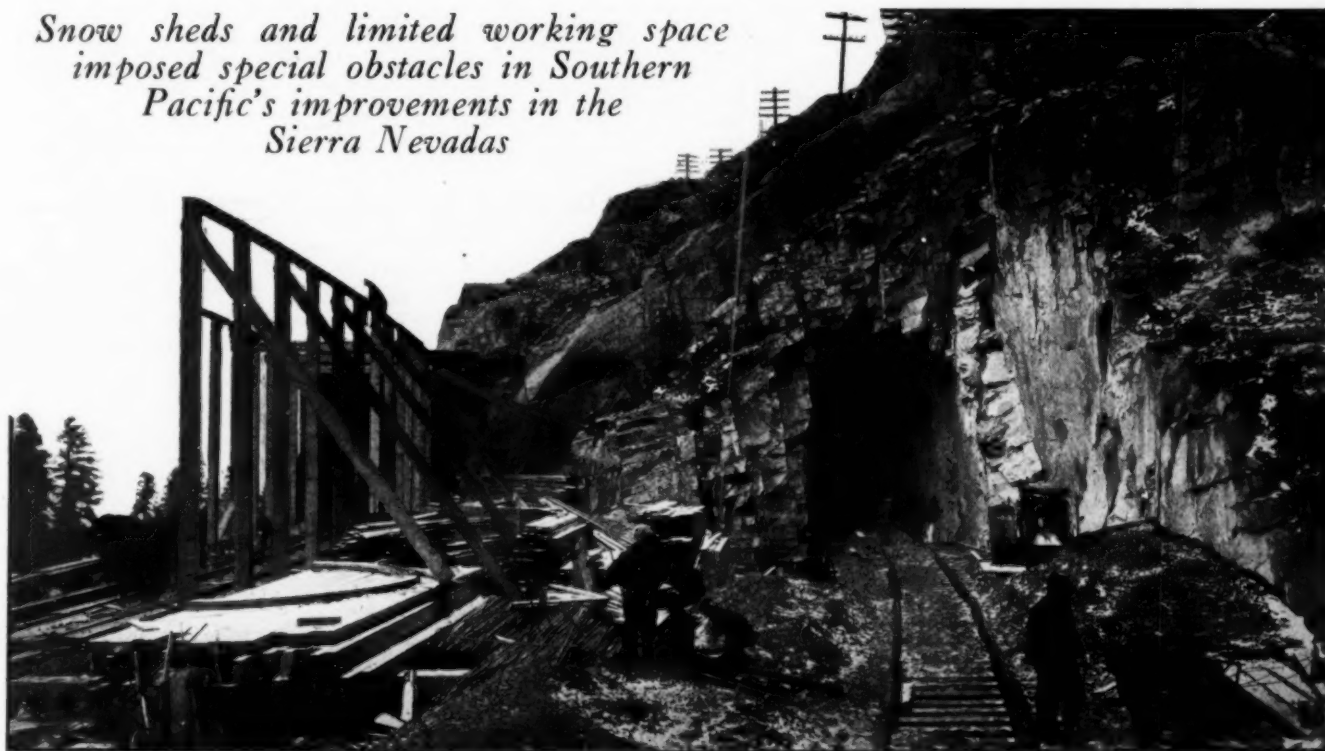
In the meantime we shall prescribe maximum reasonable class rates between the territories, but, with the partial exception noted below, shall not attempt to determine the issue of undue preference and prejudice as between the gateway points and southern border territory. That is an issue which may well await whatever reconstruction of class rates in official territory may result from the decision in the Eastern Class Rate Investigation.



On the B. R. & P. in Western Pennsylvania

Second Track Project Faced Unusual Difficulties

Snow sheds and limited working space imposed special obstacles in Southern Pacific's improvements in the Sierra Nevadas



Lack of Working Space or Storage Room Increased the Difficulty of the Work

THE construction of second track is commonly conducted under difficulties imposed by a heavy traffic on the existing track because it is the volume of this traffic on the single track which makes additional trackage necessary. However, when the necessity for double tracking its line over the Sierra Nevada mountains was imposed on the Southern Pacific a situation was presented under which second track construction imposed not only the interference of a heavy revenue traffic but also the obstacles of a location on steep mountain slopes in which $29\frac{1}{2}$ miles out of the total of 41 miles of line was covered with snow sheds, a large part of which had to be dismantled before any grading could be done, and reconstructed after the work was completed; where train movements involve helper service and are necessarily slow; and where little space was available for the storage of materials or the erection of camps.

This work embraced the closing of the last gap in double track in the 242 miles from Oakland Pier, Cal., to Sparks, Nev., and represented an important feature of a program for double-tracking the major portion of the entire Overland route to Ogden, Utah., which was advanced in a most pronounced way in 1924 by the signing of a contract with the Western Pacific for paired track operation over the single track lines of the two roads for a distance of 183 miles. The fulfillment of these various projects now gives the Southern Pacific the equivalent of double track for 540 miles in the distance of 687 miles between Oakland Pier and Lucin, Utah.

The demand for increased facilities on the Overland route was the result of a rapid growth in traffic, of which the most important item is the eastbound fruit movement.

During heavy traffic seasons this amounts to as much as 2,000,000 tons per month with movements of trains and engines at intervals averaging 26 min. for an entire month, or 23 min. for individual days. While this density of traffic might not entail serious problems of operation on single track in open country, it developed the ultimate capacity of the line over the mountains, where steep grades, helper service and the necessity for operation by the staff system introduced many difficulties, to which must be added the obstacle introduced by snow sheds, which effectively prevent any exchange of lantern, hand or whistle signals between leading and helper locomotives.

The climb of the Southern Pacific over the Sierra Nevada range may be said to embrace the engine district from Roseville, Cal., at Elevation 162, to Sparks, Nev., at Elevation 4425, a distance of 139 miles. The summit, 53 miles west of Sparks, is at Elevation 7017. On the east approach to the summit the maximum grade against westbound movement is 2.0 per cent from Sparks to Truckee, 38 miles, and 2.04 per cent from Truckee to Summit, 15 miles. On the west approach the maximum grade against eastbound movement is 1.50 per cent from Roseville to Colfax, 35 miles, 2.02 per cent from Colfax to Emigrant Gap, 30 miles, and 1.8 per cent from Emigrant Gap to Summit, 21 miles.

Two or three engines are used to handle the eastbound or loaded trains. Fruit trains usually consist of 56 loads and are handled out of Roseville by a consolidation road engine with a Mallet helper 13 cars ahead of the caboose. At Colfax another Mallet is added behind the consolidation and the three engines proceed with the train to Emigrant Gap, where the consolidation is cut out and

the two Mallet engines continue to Summit. There the helper Mallet is cut out and the train handled downhill to Sparks with one locomotive.

These operating conditions, together with the fact that the line was single track for the 41 miles between Blue

summit tunnel which breaks through the backbone of the range.

On the west side of the summit the line emerges into an upland meadow comprising the headwaters of the south fork of the Yuba river, the line following the canyon oc-



The Alinement Between Emigrant Gap and Truckee, Showing Location of New Eastbound Line Over the Summit

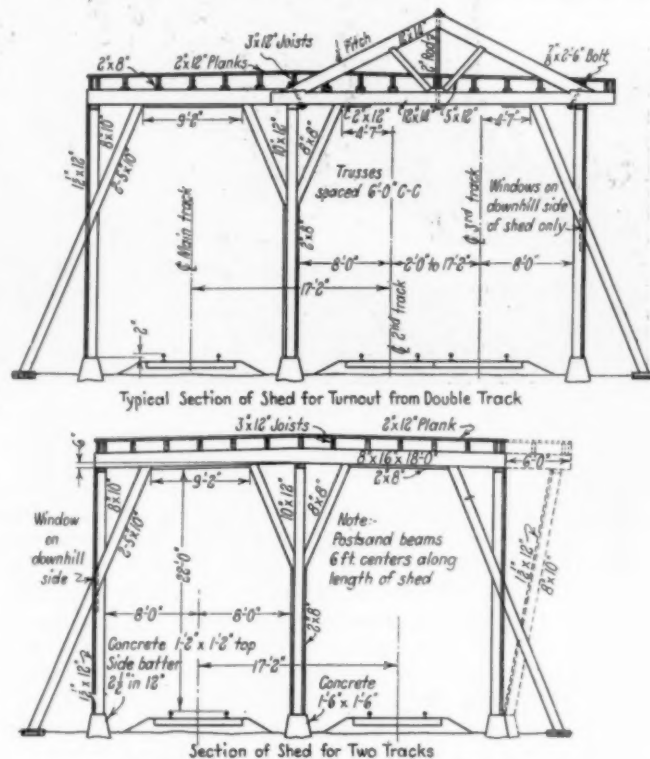
Canon and Truckee, embracing the crossing over the crest of the Sierra Nevada range, were effective in reducing the speed of trains to such an extent that the running time over the engine district was often close to 16 hours. The elimination of this stretch of single track was therefore the key to improved operation and increased capacity. However, the difficulties imposed by such a project were such as to make the cost of construction exceedingly high and to militate against its expeditious completion. Accordingly studies were made to ascertain what sections of this stretch of line imposed the most serious obstacles to train movement and what portions could be double-tracked with the least delay.

Improvement Was Authorized in Two Units

This led to the granting of authority early in 1923 for second track construction between Truckee and Andover, 6.5 miles, and between Emigrant Gap and Blue Canon, 5.3 miles. This work, which was completed in August of that year, was described briefly in an article appearing in the *Railway Age* of November 10, 1923, page 851. The article presented herewith is concerned primarily with a second project authorized late in 1923 for the completion of the gap in double track between Andover and Emigrant Gap, a distance of 28.4 miles, at a cost of \$12,000,000.

The Southern Pacific's crossing of the Sierra Nevada mountains through what is known as Donner pass, is picturesque and in some respects essentially unique. The general alinement is notably direct, although it embraces two loops on the east slope to develop distance and conform to the configuration of the mountain slopes. At Truckee the line leaves the canyon of the Truckee river and commences the approach to the summit on a location supported on mountain slopes forming the south side of the valley occupied by Donner lake. Between Truckee and Andover distance is developed by a long, narrow loop occupying both the east and west sides of Cold Creek valley, but for the remaining distance to the summit the alinement is determined by the requirement of support high up against the mountain slope, six tunnels being required to avoid excessive curvature, in addition to the

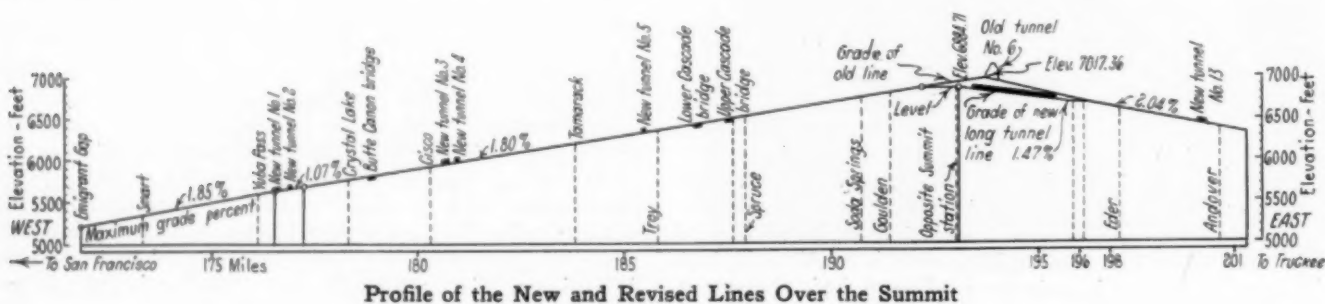
cupied by that stream all the way to Emigrant Gap. As the descent of the river is much steeper than that of the railroad, the location against the south side of the canyon is increasingly high relative to the stream with the dis-



Typical Sections, Through the Snow Sheds

tance from the summit. The alinement is more direct than on the east side of the summit but the general character is much the same.

The geologic structure of the terrain comprises granite and other rock, overlaid in some places with glacial deposits. Towards the west end of the section the granite



Profile of the New and Revised Lines Over the Summit

is replaced in the cuts by overlying strata of sedimentary rock in which Jurassic slate predominates. The mountain slopes are steep but glacial action has rounded and worn the slopes so that, in general, the grading involved is not as heavy as in many other mountain locations.

Heavy Snowfall Introduced Special Problems

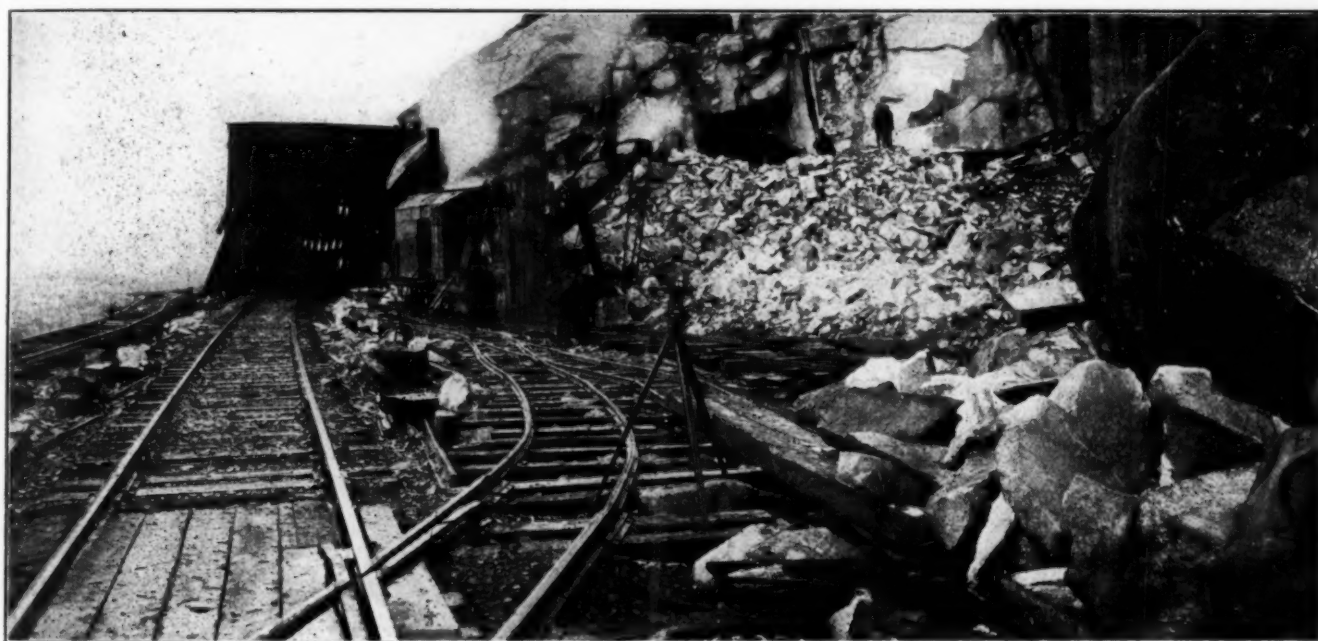
Another distinctive feature of the location is the heavy precipitation, ranging from an annual average of 48 in. at Summit to 74 in. at Blue Canon, most of which falls in the winter in the form of snow, which may accumulate to a depth of 20 ft. on the level during the winter.

This heavy snowfall is one of the most formidable difficulties presented in the operation of the line since its construction in 1866-67, and resulted in the construction of 29½ miles of snow sheds in the distance of 41 miles between Truckee and Blue Canon. Of this length of sheds 28½ miles covered the tracks in the 29 miles from Andover to Emigrant Gap. These sheds not only introduced serious obstacles to operation, as previously men-

Construct Second Track Alongside Old Line

In general, the second track was constructed parallel to the existing track, either on the inside or the outside of the old track, as conditions determined, and without change of grade. Exception to this rule obtained for a distance of 5.36 miles at the summit, where the second track occupies an independent location embracing a new summit tunnel two miles long which is effective in reducing the summit elevation 132.7 ft. and in shortening the distance 1.29 miles. The new line is 4.07 miles long, of which 2,325 ft. west of the tunnel was located on 0.2 per cent grade descending eastward and 4,250 ft. on level grade to serve as a yard for the releasing of helper locomotives, while the grade through the tunnel and on the east approach is 1.47 and 0.14 per cent descending eastward, connecting with the 1.8 per cent grade of the original track 3,000 ft. east of the east portal of the tunnel.

For the larger part of the construction district the center line of the new track was placed 17 ft. 2 in. from the center line of the old one to give a side clearance of 8 ft.



Special Precautions Were Necessary to Protect the Operated Line During the Course of the Work

tioned, and entailed heavy maintenance expenditures, but imposed a serious added expense in the construction of second track and placed certain limitations on the construction program. Not only was it necessary to remove a considerable portion of these sheds before work could proceed on the grading but the work had to be planned so that the sheds would not be removed until after the season of heavy snow fall was over and any section of work undertaken had to be closed up and again covered with snow sheds before heavy snow fall started in the early winter.

This general rule was modified to the extent that it was decided not to replace all of the sheds taken down. As a result 20½ miles of line instead of 28½ miles was covered with snow sheds after the second tracking was completed. This decision was founded on experience with a large complement of snow fighting equipment on uncovered portions of the division which indicated that the line could readily be kept open with a smaller amount of snow shed protection. The engine district is now equipped with six rotary snow plows, of which four are of the largest and most modern design, seven flangers and three spreaders.

from the center line of each track to the faces of center posts supporting snow sheds. This spacing was increased in the vicinity of six second-track tunnels for the purpose of insuring that blasting for the new tunnels would not disturb the tunnels or walls of the cuts occupied by the original track.

The excavation in tunnels totaled 260,000 cu. yd. and in cuts 930,000 cu. yd., practically all of which was solid rock of the character previously described. The grading was largely side-hill work with relatively short hauls and was awarded on the basis of bids naming a single fixed price per cubic yard for each of the several sections into which the work was divided. No attempt was made to classify the material in individual sections. The work was carried on at an intensive scale under four general contractors, as many as 20 steam shovels being employed simultaneously. These varied from small revolving shovels on caterpillar treads to 70-ton railroad type shovels. Most of the material was handled in narrow-gauge cars on tracks which crossed over the operated line so that material removed from cuts inside the operated line could be used in widening fills on the outside. This arrangement, together with the necessity for blasting close

to the track, required the exercise of extreme care to protect trains.

Important Tunnel Work

The tunnel work totaled 14,338 ft. of single-track tunnel, of which 10,320 ft. represents the length of the summit tunnel, the remaining length being divided among seven short tunnels ranging from 274 to 915 ft. in length. Three of these short tunnels are located substantially parallel to and opposite tunnels in the original track, while the three others were built at locations where the new line lies inside the old one and the physical conditions made it impracticable for the single track cut to be widened for double track, and the tunnels provided better alinement.

The summit tunnel was driven by the top-heading method. A full width top heading was driven one round in advance from the bench, the muck from the heading being pushed off the bench and removed with the muck from the bench. An average of 36 holes per round was drilled in the heading, with 12 to 16-ft. bits, while 24 holes per round were drilled in the bench, using steel up to 20 ft. long. All bench holes were drilled from the face. The heading drills were supported from columns. The bench holes in the east entry were driven by drills supported from a horizontal bar while bench holes in the west entry were drilled from a platform car provided with bars for the support of the drills. About 1,250 lb. of explosive was used per round, consisting of equal parts of 40 per cent to 60 per cent gelatine. The muck was loaded by air-operated Marion shovels into four-yard dump cars handled in trains on a three-foot gage track by electric storage battery locomotives. The rock is a blocky granite that required timbering for a distance of about 1,500 ft. from the east portal and 1,200 ft. in the west end and in shorter sections throughout the tunnel where rock was not self-supporting. A total of 6,166 ft. of concrete lining was installed to replace timbering where rock was not self-supporting. Large overbreaks occurred in the blocky granite.

As the progress in the construction of this tunnel definitely fixed the date for the completion of the second track project the work was carried on through the winter months, thereby introducing a problem of the disposal of the muck on account of the heavy snow fall. Interference from this cause was overcome by covering portions of the dumping tracks with temporary snow sheds and by providing high trestles from which the dumping could be done when the snow was deep.

How the Snow Shed Work Was Handled

The character of snow shed construction is indicated in the drawings and photographs. In the standard double-track shed three lines of 10-in. by 12-in. posts parallel with the track are spaced 17 ft. center to center to afford a clearance of 8 ft. each side of the center line of each track. The posts are spaced 6 ft. center to center in the rows and are capped by 4-in. by 12-in. longitudinal plates. The roof construction comprises 8-in. by 16-in. transverse beams centered over the posts, these crossbeams carrying 3-in. by 12-in. joists placed longitudinally at about a 33-in. spacing. The roof is covered with 2-in. by 12-in. planking and the sidewalks with 1½-in. by 12-in. planks. Where crossovers or turnouts demand a greater spacing of the lines of posts, wooden roof trusses spaced 6 ft. center to center are introduced, the flat form of the roof being retained by supporting the joists on the bottom instead of the top chords of these trusses.

Knee braces and longitudinal and transverse sway braces provide the necessary stability. The standard double-track shed requires 550 ft. b. m. of timber per running foot. Where conditions demanded the removal of the old single-

track shed, the new double-track shed was built entirely of new material. Where the old shed was allowed to remain in place the extensions were made largely from material salvaged from the old sheds removed.

As the dismantling of old sheds and the construction of new ones over operated tracks called for the exercise of extreme care to avoid accidents, it was deemed imperative that all work on these sheds be carried on with company forces and an average of 20 gangs of 25 men each was employed on this work during the construction period, these gangs being organized from a nucleus of six regular snowshed gangs normally employed in maintaining them. In addition, two gangs were assigned to work trains employed in distributing material. This service had to be maintained continually as lack of storage space made it necessary to distribute the material in small quantities direct to the point of use. This same condition made it impracticable to use power saws, such sawing as was necessary being done by hand at the point where the material



A Part of the West Approach to the New Summit Tunnel

was erected. Knee braces were sawed to templates and spiked in place, after which the scabs or stop planks which abut against the lower edges of the knee braces were cut to give a tight fit between the bottoms of the knee braces and the tops of the pedestals upon which the posts were erected. The long outside braces were also cut to fit.

Except for bolted connections in the roof trusses of the sheds over turnouts or crossovers, all connections in the snow shed construction were made with wire nails or boat spikes. Consequently the drilling of holes was reduced to a minimum.

The posts were hoisted into place by horse-drawn tackle attached to posts previously set into position. A small hoist, also operated by a horse, was employed in raising the roof materials to the completed portion of the shed, whence it was moved forward for erection, the 8-in. by 16-in. cross beams being delivered to position by setting a plate dolly under each end and rolling the dollies forward on the plates capping the two lines of posts.

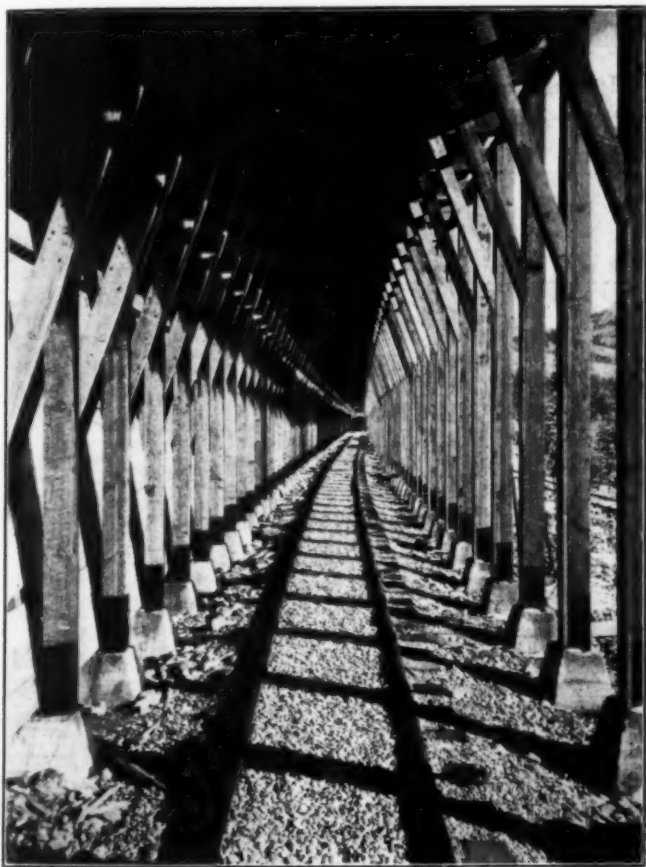
During the interval between the dismantling of the sheds for one season's work and their replacement following the completion of the grading, the snow shed gangs were em-

ployed in building the culverts for the next season's work so as to have them completed before the grading was started.

Large Amount of Work Involved

The work on the construction section between Andover and Emigrant Gap required the removal of 62,000 lineal ft. of shed and the replacement of 29,000 ft. During 1924, 34,000 lineal ft. of shed was removed and 12,000 ft. of new shed was constructed, while in 1925, 28,000 lineal ft. of shed was removed and 17,000 ft. was rebuilt. Substantially the same amount of new shed was built. In addition 17,000 ft. of one-half shed was built over the second track and 6,300 ft. of new double-track shed, as well as 8,800 ft. of new single-track shed where the two tracks are not parallel.

The track was laid with 110-lb. R. E. section rail 39-ft.



A Typical Single-Track Snow Shed

long, with 21 ties to the panel. All ties are protected by 9½-in. by 10-in. tie plates having a cant of 1 in 38.

With the exception of a large number of small culverts, the bridge work on the second-track project was limited to three viaducts, each approximately 400 ft. long. At the location of these structures the track centers were spread a sufficient amount to permit the construction of an independent viaduct for the second track without interfering with the old structure.

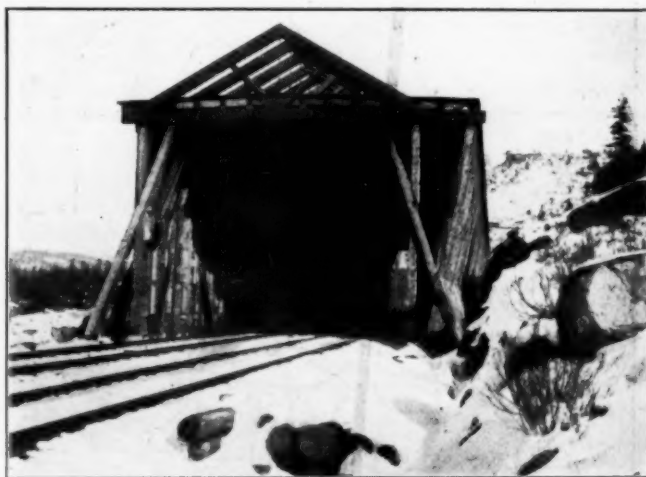
Passing tracks were provided at Emigrant Gap and Andover, the two ends of the last section of the double-track project, 4,000-ft. westbound sidings at Yuba Pass and Troy, and center passing tracks at Crystal Lake and Troy. Supplementary tracks were provided at the west approach to the new summit tunnel, where facilities are provided for the releasing of helper locomotives. At that point a 6,000-ft. siding was provided under snow shed for winter use and a similar siding on the westbound track. In addition,

a 100-ft. American Bridge Company turntable of the three-point-support type has been installed, between the eastbound and westbound tracks, housed to keep out the snow. Tables 80-ft. in length have also been provided at Cisco and at Emigrant Gap.

Install Color Light Automatic Block Signals

The staff system has been replaced by automatic block signals operated by 10-volt direct current supplied by storage batteries which are charged through rectifiers from a 2300-volt alternating current transmission line. The signals are of the three-color light style R type of the Union Switch & Signal Company.

The project was authorized November 9, 1923, and the first section of new second track, a length of four miles, was turned over for operation on August 21, 1924. The entire project was completed on October 15, 1925. The work was planned and carried out under the direction of G. W. Boschke, chief engineer of the Southern Pacific, Pacific system. E. E. Mayo was engineer in charge. The new tracks were laid and ballasted by construction track gangs working directly under the chief engineer. Snow shed work done by company forces was under the



Roof Trusses Were Provided in Snow Sheds When Located Over Crossovers

general direction of W. F. Turner, division engineer at Sacramento, Cal., and directly in charge of J. B. Malloy, supervisor of bridges and buildings.

The four general contractors participating in this project were W. A. Bechtel of San Francisco; Erickson-Petterson-Grier Company of San Francisco; the Utah Construction Company of Ogden, Utah, and Grier & Meade, San Francisco, Cal.

THE PUBLIC SERVICE COMMISSION of New York has authorized increases and decreases in the rates for transportation of baggage in New York City by the New York Transfer Company and the Westcott Express Company. The base rate for one trunk is advanced from \$1 to \$1.15; for a bag or valise it is reduced from 80 cents to 75 cents. Twenty trunks in a lot will be carried at 30 per cent less than tariff and 40 trunks at 50 per cent less. Both companies told the commission that their revenues had decreased severely since 1922. The Westcott Company, in 1925, was operated at a loss. The falling off in business is said to be due in part to changes in women's fashions, making it less necessary to use trunks in traveling, and to the great increase in the number of taxicabs in which a passenger can take his trunk along with him.

New York Central

*Increases proportion of stock to total capitalization—
Record of operating efficiency*

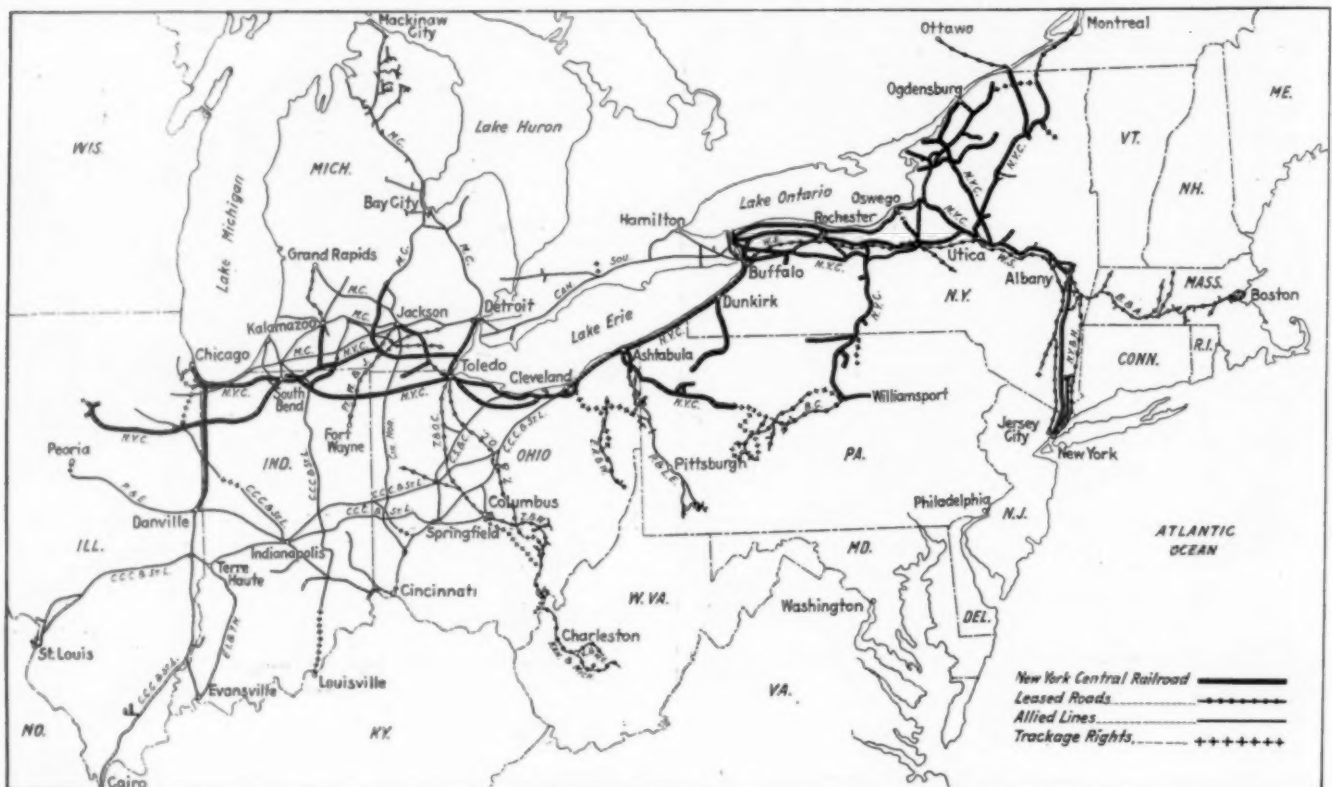
THE New York Central annual report for 1925 made public this week is about the best report that the company has ever issued. It shows net income after interest and other charges of \$48,627,224, which compared with \$39,250,400 in 1924, with \$45,339,427 in 1923 and with \$45,659,217 in the calendar year 1916 which was the best year in the property's history prior to 1925. The net income was equivalent to \$12.69 per share on the \$383,258,235 capital stock outstanding at the close of the year. The 1924 net income equalled \$12.88 a share on \$304,836,835 capital stock.

It will be observed that the capital stock at the end of 1925 was \$78,421,400 greater than at the end of 1924.

debtedness the New York Central now has a somewhat more satisfactory capital structure. Thus at the end of 1923, the ratio of capital stock to total capitalization was 25.84 per cent. At the end of 1924, this had become 28.18 per cent while at the end of 1925, it had become 35.49 per cent. With the New York Central now paying 7 per cent dividends on its stock and earning over \$12.00 a share, it seems to be in an especially preferred position as concerns future financing with issues of stock.

Dividend Income

It thus appears that one of the chief factors in the New York Central's increase in net income available for divi-



The New York Central System

Similarly it was \$115,000,000 greater than at the end of 1923. This change is explained by the fact that the New York Central, early in 1924, sold \$24,902,460 capital stock and also by the conversion into capital stock of the 20-year 6 per cent convertible debenture bonds. Of such bonds, \$11,611,300 were converted in 1924 and in 1925, prior to the expiration date of the conversion privilege on May 1, an additional \$75,532,500. The importance of these changes is two-fold. First is the fact that the New York Central's funded debt on December 31, 1925, totaling \$696,501,507 was \$80,414,884 less than on December 31, 1924, and that the amount paid out by the company in interest in 1925 was \$28,684,284 or \$5,507,027 less than in 1924. Second is the fact that on account of the increase in capital stock and the decrease in bonded in-

dends in 1925 was the decrease in payments for interest. It also appears that the corporation as the parent company of the New York Central System received more income in the form of dividends on the stocks of the subsidiary companies. The amount received in dividends was \$15,318,325 which was \$929,546 greater than in 1924. This dividend income has now exceeded \$14,000,000 for the past three years, but to complete the record it should be noted that in 1922 the amount of dividend income was but \$10,000,000 and in 1921 but \$6,000,000. Such is the manner, in short, in which the parent company has benefited from the increased prosperity of the subsidiary lines, of which, of course, the three most important are the Michigan Central, the Cleveland, Cincinnati, Chicago & St. Louis and the Pittsburgh & Lake Erie. The Michi-

gan Central in 1925 paid 20 per cent dividends. The parent company on December 31, 1925, owned 95.58 per cent of the stock and has recently made an offer to buy the rest at \$1,000 a share. The Big Four stock pays 5 per cent on both its common and preferred issues and the parent company owns about 92 per cent of the former and 85 per cent of the latter. The Pittsburgh & Lake Erie pays 10 per cent dividends and the parent company owns a majority of the company's stock. Increased dividends declared by the Michigan Central and Big Four will appear in the New York Central's 1926 income account.

To give the reader some idea of the relationships, it might be added that the dividend income received by the

of increasing its operating efficiency but as every railroad man knows there must be a limit beyond which increases in efficiency can be carried. The fact that the reports of revenue car loadings so frequently set up new records of traffic volume lead the observer to believe that the volume of traffic actually is increasing in the degree that the car loading figures indicate. It is true that the revenue ton-miles carried by the railroads of this country did set up a new record in 1925 by being about $\frac{1}{4}$ of one per cent greater than in the previous busiest year, which was 1923.

However, it is also a fact that in 1925 as compared with 1923 the increases were in that part of the country

TABLE I.—NEW YORK CENTRAL RAILROAD, OPERATING RESULTS, SELECTED ITEMS, 1916 TO 1925

Year	Mileage	Revenue Ton-Miles	Revenue Passenger Miles	Revenue Per Ton Mile Cents	Total Operating Revenues	Total Operating Expenses	Net Operating Revenues	Operating Ratio	Net Railway Operating Income	Net After Charges
1916.....	5,689	21,382,081,000	2,353,190,000	0.598	\$201,585,049	\$129,738,369	\$71,846,679	64.36	.....	\$45,659,217
1917.....	5,685	22,542,548,000	2,546,427,000	0.603	216,267,517	153,597,905	62,669,612	71.02	.....	25,599,220
1918.....	5,682	23,851,288,000	2,520,527,000	0.737	269,270,957	210,637,849	58,633,108	78.23	\$46,035,695	17,917,122
1919.....	5,675	20,186,750,000	2,954,170,000	0.862	283,659,331	224,964,912	58,694,419	79.31	48,201,701	19,917,251
1920.....	5,684	22,567,929,000	3,094,163,000	0.930	338,624,456	317,799,173	20,825,283	93.84	3,743,189	13,734,688
1921.....	5,704	14,831,625,000	2,608,080,000	1.208	292,130,995	221,768,390	70,362,605	75.91	54,938,035	22,295,686
1922.....	5,710	17,648,981,000	2,572,565,000	1.122	316,620,098	250,400,470	66,219,628	79.09	50,571,544	20,635,186
1923.....	5,699	22,764,912,000	2,758,223,000	1.035	365,175,188	278,602,021	86,573,167	76.29	65,815,799	45,339,427
INCLUDING OPERATING RESULTS OF BOSTON & ALBANY AND OHIO CENTRAL LINES										
1923.....	6,890	26,321,574,650	3,193,533,249	1.040	421,034,784	325,917,241	95,117,543	77.41	70,989,101	45,339,427
1924.....	6,920	21,095,677,532	3,122,307,544	1.077	369,606,930	279,970,163	89,636,767	75.75	64,635,074	39,250,400
1925.....	6,931	22,463,486,692	3,168,122,188	1.069	385,994,505	290,440,958	95,553,546	75.24	67,920,550	48,627,224

* Standard return for operations during federal control or average net railway operating income for three years ended June 30, 1917, \$51,739,500.

parent company from these and other sources,—as above noted, \$15,318,325—was equivalent to slightly over one-half the amount paid out by it in interest charges. It was equivalent to about 60 per cent of the amount paid out in dividends. However, several of the company's lines are leased, notably the West Shore, the Boston & Albany, the Toledo & Ohio Central including subsidiaries and now the new Hudson River Connecting, etc. The operating results of these companies are reported with those of the parent company and in 1925 the latter was charged \$14,079,485 in the form of "Rent for leased roads."

The next most important factor that seems to stand out in the New York Central's annual report for 1925

south of the Ohio and Potomac rivers, notably in the Pocahontas region and in Florida. In the eastern district there was a substantial decrease. Using net ton-miles (including both revenue and non-revenue freight) as an index, it appears that the net ton-miles of the Eastern District in 1925 were 8.5 per cent less than in 1923. The New York Central was slightly out of line even with this because its net ton-miles in 1925 were

TABLE III.—NEW YORK CENTRAL COMPARED WITH EASTERN DISTRICT, 1925.

	New York Central	Average of all roads in Eastern District
Car-miles per day.....	28.5	24.6
Net tons per loaded car.....	26.3	28.3
Net ton-miles per car-day.....	469	449
Freight cars per train.....	58.8	46.3
Gross tons per train.....	2194	1799
Net tons per train.....	952	827
Train speed, miles per train-hour.....	11.6	11.1
Gross ton-miles per train-hour.....	25,413	20,033
Net ton-miles per train-hour.....	11,051	9,209
Lb. coal per 1,000 gross ton-miles.....	124	141
Locomotive miles per locomotive day.....	53.8	54.7
Per cent freight locos. unseviceable.....	23.8	19.5
Per cent freight cars unseviceable.....	4.1	8.4

13.7 per cent less than in 1923 and its revenue ton-miles besides being less than in 1923 were less also than the reported figures for several previous years. The fact is that in 1925, the New York Central did not have what it would be expected to regard as record breaking tonnage or anything like it.

The 1925 Results

In 1925 as compared with 1924 the New York Central carried 5.5 per cent more revenue tons of freight and moved 6.5 per cent more revenue ton-miles. It showed an increase of 4.4 per cent in its total operating revenues and an increase of 3.8 per cent in its total operating expenses. The operating ratio of 75.24 compared with 75.75 in 1924 and with 77.41 in 1923. The operating expense accounts showed an increase of 13.6 per cent in maintenance of way expenses attributed principally to the addition of the new facilities of the Hudson River Connecting and to the retirement of property in connection with this project. The maintenance of equipment account increased 2.5 per cent. There was a reduction of

	1925	1923	Per cent of change	
			Inc.	Dec.
Mileage operated.....	6,478	6,469	0.2	..
Gross ton-miles (thousands).....	54,974,822	60,817,175	..	9.5
Net ton-miles (thousands).....	23,858,986	27,638,706	..	13.7
Freight train-miles (thousands).....	25,055	28,805	..	13.0
Freight locomotive-miles (thousands).....	30,211	35,461	..	14.8
Freight car-miles (thousands).....	1,448,266	1,577,773	..	8.2
Freight train-hours.....	2,158,993	2,777,565	..	22.3
Tons of coal consumed by freight locos.....	3,750,364	4,331,069	..	13.4
Car-miles per day.....	28.5	28.2	1.0	..
Net tons per loaded car.....	26.3	27.7	..	5.0
Per cent loaded to total car-miles.....	62.5	63.4	..	0.9
Net ton-miles per car day.....	469	494	..	5.0
Freight cars per train.....	58.8	55.8	5.4	..
Gross tons per train.....	2194	2111	3.9	..
Net tons per train.....	952	960	..	0.8
Train speed, miles per train-hour.....	11.6	10.4	11.5	..
Gross ton-miles per train-hour.....	25,463	21,896	16.3	..
Net ton-miles per train-hour.....	11,051	9,951	11.1	..
Lb. coal per 1,000 gross ton-miles.....	124	129	..	4.8
Locomotive-miles per locomotive-day.....	53.8	56.2	..	4.2
Per cent freight locos. unseviceable.....	23.8	25.1	..	1.3
Per cent freight cars unseviceable.....	4.1	8.1	..	4.0

was a seeming lack of traffic volume. The parent company reported net railway operating income of \$67,920,550 as compared with \$64,635,074 in 1924, an increase of \$3,285,475. However, the 1925 net operating income did not equal that of 1923 when it was \$70,989,101. It is not difficult to find the cause. It was simply that while in 1925 the company moved 6.5 per cent more revenue ton-miles than in 1924, it moved 14.6 per cent less revenue ton-miles than in 1923. The New York Central has since the period of federal control made a remarkable job

0.35 per cent in transportation expenses due largely to savings in fuel as balanced by the increased traffic.

Diversified Tonnage

The New York Central, of course, has a diversified tonnage. In 1925 its revenue tonnage was divided as follows: Products of agriculture, 7 per cent; animals and products, 2 per cent; products of mines, 56 per cent; products of forests, 4 per cent; manufactures and miscellaneous, 27 per cent and l.c.l., 3.4 per cent. The bituminous coal tonnage in 1925 constituted 35 per cent of the total revenue tonnage. This coal tonnage was 13 per cent greater than in 1924 but 21 per cent less than in 1923. It is not generally realized that the New York Central's proportion of coal tonnage is so large but it will be readily appreciated that the decrease of 21 per cent as against 1923 is a rather sizeable decrease. It should also be pointed out that nearly every one of the sub-classifications under the general heading of manufactures and miscellaneous showed an increase over 1924 but a decrease under 1923. In the case of l.c.l. freight the 1925 figure was 6 per cent under 1924 and 13 per cent under 1923 which trend is probably typical of most roads.

Operating Statistics

The New York Central is noted for its skill in moving fast freight. Such shippers' representatives as the writer of this article has talked to speak of it as being at present the most skillful line in this respect in trunk line territory. Its operating statistics present an unusual picture of operating efficiency. In Table II are shown the 1925 figures compared with those for 1923. In the articles reviewing the operations of various railroads which have appeared in these columns the comparisons have been made as between 1925 and 1920. The reason for departing from the usual 1920 comparison is that in 1925 the New York Central figures included the Toledo & Ohio Central Lines whereas in 1920 they did not. However, one notes, first, the decrease of 13.7 per cent in net ton-miles and next the outstanding fact that freight train-hours were decreased no less than 22.3 per cent. There was no great increase in the train load but because of the increase from 10.4 to 11.6 miles per hour in the average train speed there was an increase of 16.3 per cent in the gross ton-miles per train-hour and of 11.1 per cent in the net ton-miles per train-hour. The New York Central was supposed to be doing pretty well in 1923. The

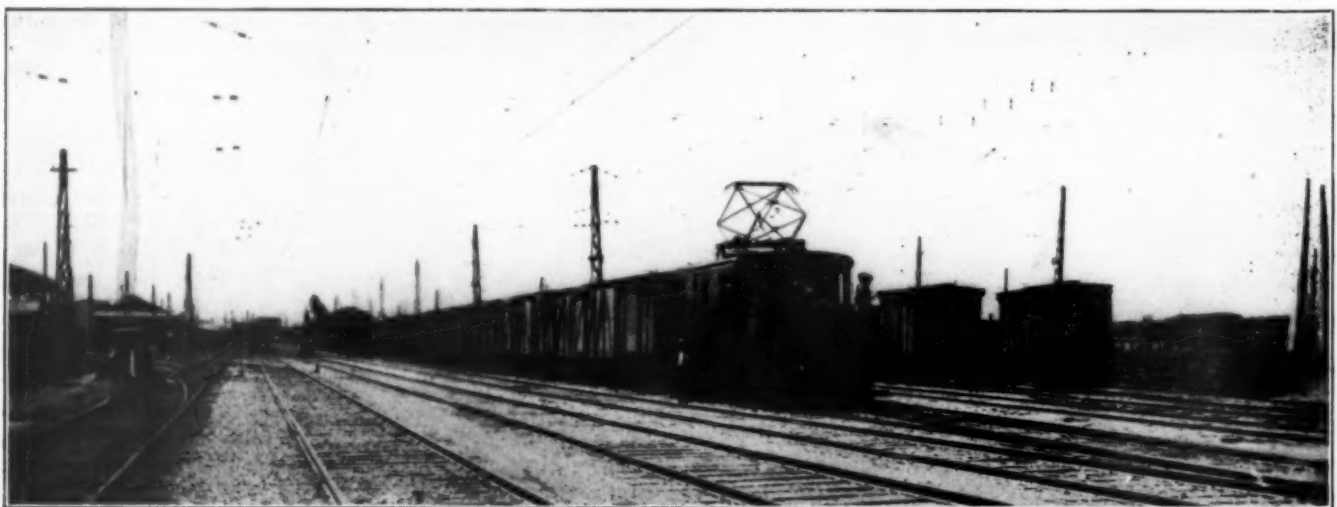
significance of these comparisons is not so much in the per cent of change as in the fact that the road should have been able to make such substantial improvement on an already very good record.

A Remarkable Comparison

But there is more to the story than that. Thus one may develop the figures shown in Table III in which the 1925 figures for the New York Central are compared with the average figures for the eastern roads.

It will be noted that in all but three of these standard indexes of operating efficiency the New York Central is better than the average. The three exceptions are net tons per loaded car, locomotive miles per locomotive day and the per cent of unserviceable freight locomotives. The first, the average load per car, depends upon the character of the traffic and is conceded to be a matter that is largely beyond the control of the railroad management. In the case of the two units of locomotive performance, one is reminded that few roads are as well provided with locomotives as is the New York Central. Actually there have been months of peak traffic in which the New York Central operated with as little as 55 per cent of its power actually in use on the road—that is not held for repairs or stored in serviceable condition. This would reduce the locomotive miles per locomotive day because the unit is merely the freight locomotive miles divided by all the locomotives and the days. Nor do we expect a road to worry about unserviceable power if it is operating efficiently and has serviceable all the power for which there is use. These provisos, therefore, are not important and the record stands out as a remarkable one. Seldom can one find a tabulation of operating statistics that shows such unusually good comparisons as these.

The facts indicate that the New York Central has improved its capital structure by now having a larger proportion of capital stock to total capitalization than formerly, as a corollary of which a fair proportion of the funds that were formerly needed for interest are now available for dividends. It is also clear that the parent company is receiving an increasing return as a result of the increasing prosperity of its subsidiary companies. The New York Central itself in 1925 did not have the heavy traffic that many had expected. It is handling its business with remarkable efficiency as evidenced by its operating statistics and by the satisfaction which its service is giving to shippers.



Electric Switching Locomotive, Chilean State Railways

New Construction in Oregon

Three roads permitted by Commission to proceed with plans—Some permitted conditionally

WASHINGTON, D. C.

THE complaint of the Public Service Commission of Oregon seeking an order or orders by the Interstate Commerce Commission requiring the construction and operation of various new lines of railway in the interior portion of Oregon was dismissed by the commission in a report and order made public on May 11 in which, however, certificates were issued granting in whole or part the applications of three railroads for authority to build new lines in the state and into northern California. Six cases were dealt with together in the report by Commissioner Aitchison, to which Commissioner McManamy dissented in part while Commissioners

line from a point near Klamath Falls southeasterly to Alturas, Cal., to a connection with the Nevada-California-Oregon, 99 miles, and the Southern Pacific was authorized to acquire control of the Nevada-California-Oregon.

"In a broad way," Commissioner Aitchison said, "the proceedings dealt with in this report require our answer as to the railroad facilities which shall be afforded Eastern Oregon and Northern California, and as to whether in the construction of additional railroad lines needed to serve that territory—possibly the largest area of the country remaining without rail mileage—the principle of maintaining competition between carriers shall be observed, or the policy of creating zones of influence so that the field shall be preserved for intensive cultivation by one rail carrier under appropriate conditions and reservations. A number of proceedings on our dockets must be given common consideration to permit as comprehensive a view of the situation as the nature of the subject matter and the importance of the determination require. Although these proceedings were not all heard together, they may for convenience be disposed of in this report. While portions of Northern California are embraced in the pending proceedings, the greater portion of the territory involved is within the State of Oregon, east of the Cascade Mountains, and references to places or sections will be considered as within Oregon unless the fact is otherwise made to appear."

The commissioner's statement of the applications and his conclusions are as follows:

In the complaint in No. 14392, filed October 30, 1922, the Public Service Commission of Oregon, proceeding under paragraph (21) of section 1 of the interstate commerce act, alleges that public convenience and necessity demand the construction of adequate and efficient railroads between certain parts of Oregon for the transportation of freight and passengers. It asserts that the expense of construction of such roads will not impair the ability of defendants to perform their duties to the public. The Oregon commission asks us to require defendants, or someone or more of them, to extend and construct a railroad from Crane westward to Oakridge to connect with roads that will afford the territory thus traversed market outlets in western Oregon and California; also to extend and construct connections between the railroad terminals at Bend and Kirk, and a branch line to Lakeview. It asks that these projected lines be afforded such joint and common use of existing railroads as will justify the desired construction and adequately serve the districts concerned, and that these railroads be so grouped and such joint and common use ordered as will maintain and assure maximum competition and the most efficient use of cars, equipment and facilities.

Hearing was held upon this complaint, and a report proposed by the examiner was served upon the parties, in which it was proposed to grant a large measure of the relief sought. Exceptions were filed by defendants, and answer by complainant. The case was submitted on briefs and oral argument March 28, 1925, but the filing soon thereafter of the various applications hereinafter discussed has led us to withhold a decision until the whole matter could be determined. What these applications propose is largely in substitution for the proposals of the Oregon Commission, so far as meeting local needs is concerned.

Finance Docket No. 4730. The Oregon, California & Eastern Railway Company, frequently referred to as the "Strahorn Railroad," owns and operates in Klamath County a line of railroad approximately 40 miles long, extending from Klamath Falls eastward and northeastward to Sprague River.

By application filed March 26, 1925, pursuant to the provisions of paragraphs (18) to (21) of section 1 of the act, the Oregon, California & Eastern seeks a certificate of public convenience and necessity authorizing it to construct three branches, from the northerly terminus at Sprague River, as follows: (1) northerly



New Lines Authorized in Oregon and California

Meyer, Woodlock and Taylor wrote separate concurring opinions.

The Oregon, California & Eastern, which had asked authority to build three branches, from Sprague river to Silver Lake, 63 miles, from a point on that branch along the Williamson river 15 miles, and from Sprague river southeasterly to Lakeview, 65 miles, was granted a certificate conditioned upon its grant to the Oregon Trunk of operating rights over its line between a point of connection and Klamath Falls, if the Oregon Trunk should fail to reach an agreement with the Southern Pacific for joint operation over its line. The Southern Pacific was also authorized to acquire control of the O. C. & E., by purchase of capital stock, conditioned upon the consummation of an arrangement whereby the Oregon Trunk will be enabled to operate either over the Natron Cut-off or the line of the O. C. & E. The Oregon Trunk, which had sought authority to build from Bend to Klamath Falls, 178 miles, was authorized to build to a connection with the O. C. & E., subject, however, to a condition that should it be granted trackage rights over the Southern Pacific line between Paunina and Klamath Falls, it shall construct only to a point of connection with the Natron cut-off. The Central Pacific was authorized to build a

63 miles to Silver Lake, in Lake County, Oreg.; (2) from a point on the proposed Silver Lake Branch approximately 20 miles north of Sprague River, northwesterly along the Williamson River approximately 15 miles, in Klamath County; (3) from Sprague River southeasterly approximately 65 miles to Lakeview.

Finance Docket No. 4941. The Southern Pacific Company, under the provisions of paragraph (2) of section 5 of the act, filed application for authority to acquire control by stock ownership of the Oregon, California & Eastern Railway Company. This application was made pursuant to a contract executed February 3, 1925, between the Southern Pacific Company and Robert E. Strahorn. Following the execution of the contract and in accordance with the terms thereof, the Southern Pacific acquired and now owns slightly less than a majority of the capital stock and all of the outstanding first mortgage bonds of the Oregon, California & Eastern. Approval of the purchase of the balance of the stock is now sought by the Southern Pacific.

Finance Dockets Nos. 4914 and 5111. In the earlier of these proceedings, the Central Pacific Railway Company by application filed June 20, 1925, seeks a certificate of public convenience and necessity authorizing the construction of a line of railroad from a point on its existing line 2.2 miles south of Klamath Falls, southeasterly to Cornell, Modoc County, Calif., 36 miles. On October 2, 1925, but not in time for assignment and consolidation with the above-mentioned applications, the Central Pacific Railway Company filed an application, Finance Docket No. 5111, for a certificate authorizing the construction of 62.1 additional miles of railroad forming an extension of the proposed Klamath Falls-Cornell line. This added mileage extends from Cornell southeasterly to Alturas, Modoc County, Calif., a city located on the Nevada-California-Oregon Railway. All the essential facts with respect to No. 5111 have been covered by evidence in the present record, and have been discussed in argument. No one requests a separate hearing. The proposed construction involved forms a continuous line of railroad from a point on the existing line of the Central Pacific near Klamath Falls, through Cornell to Alturas. It is an essential part of the general plan, and will be dealt with in this report.

Finance Docket No. 4924. The Southern Pacific Company, under the provisions of paragraph (2) of section 5 of the act, applies for authority to acquire control by stock ownership of the Nevada-California-Oregon Railway, a Nevada corporation, owning and operating a narrow gage railroad 154.63 miles in length extending from Lakeview southerly through Alturas, Calif., to a point of connection with the Fernley Branch of the Central Pacific (operated as a part of Southern Pacific System) at Wendel, Lassen County, Calif. The application was filed pursuant to a contract executed April 30, 1925, by the Southern Pacific and Charles Moran, representing the owners of all the capital stock and bonds of Nevada-California-Oregon.

Finance Docket No. 4810. The Oregon Trunk Railway, a Washington corporation, whose capital stock is owned by the Spokane, Portland & Seattle Railway Company, whose stock in turn is owned equally by the Great Northern Railway Company and the Northern Pacific Railway Company, now owns and operates a railroad extending from Fallbridge, Wash., on the north bank of the Columbia River, southerly along the Deschutes River a distance of about 151 miles to Bend, Deschutes County, Oreg. By application filed May 5, 1925, the Oregon Trunk requests a certificate of public convenience and necessity, authorizing the construction of an extension of its existing line from Bend in a southwesterly direction a distance of 66 miles to a point near Paunina, a station on the recently constructed portion of the Natron Cut-off line of the Central Pacific, and thence southeasterly across Klamath Marsh and along the Williamson River to Sprague River, approximately 70 miles, and thence south and west approximately 42 miles to Klamath Falls, making a total extension of 178 miles from Bend.

The Southern Pacific, the Central Pacific, and the Oregon, California & Eastern oppose the Oregon Trunk's application.

Between Black Butte, near Weed, and Grass Lake, Calif., there is in progress certain new construction authorized by us October 8, 1925, known as the "Black Butte Cut-off." *Construction of Black Butte Cut-off by C. P. Ry.*, 99 I.C.C. 780.

By consent, the finance docket applications, other than No. 5111, were consolidated for hearing and argument. The Public Service and Railroad Commissions of Oregon, California, and Nevada intervened, as did various civic organizations.

The Oregon Commission does not oppose the plans of the railway companies except so far as they may be considered a substitute for the proposed cross-state line between the Natron Cut-off and the connection with the Oregon Short Line at Crane or Harriman. The route between western Oregon and eastern territory by way of Crane would be more than 200 miles shorter than that of the Southern Pacific after completion of the proposed line of the latter between Klamath Falls and Wendel. Shipping interests of southern Idaho join in the request for a

cross-state line in Oregon, to afford them more direct communication with California. The Southern Pacific opposes the plan of the Oregon Trunk for a line to Klamath Basin on the ground that it would be an unnecessary duplication of facilities; that it is in position to serve the Klamath Basin adequately with its own lines; and that the amount of tonnage now tributary to the Oregon Trunk is approximately as great as that tributary to the Southern Pacific in southern Oregon, including the lines of the Oregon, California & Eastern. It cites the report in *Construction of Natron Cut-off by Central Pacific Ry.*, 82 I.C.C. 185, which states that one of the principal purposes of the new line was to serve the local territory. The Oregon Trunk represents that the Southern Pacific, with its proposed control of the Oregon, California & Eastern and Nevada-California-Oregon, will monopolize about 70 per cent of the timber tonnage east of the Cascades, in addition to its well-known predominating influence in the much more important traffic territory west of the Cascades; and that the public interest, as well as the requirements of the northern lines for additional tonnage, justifies the construction of its proposed line to Klamath Falls.

Conclusions

Our task in determining the issues has been simplified by the proposals put forward by the carriers. There is no question, such as confronted us in the *Wenatchee Southern Case*, *supra*, as to the stability of the financial structure of any of the carriers, or as to their general results from operation. The most unfavorable view of the various projects could be taken, and yet, if all of them were consummated, the ability of the major systems to serve the public adequately would be but inconsiderably impaired thereby. Much of the complaint made by the Oregon Commission, with the important exception of the cross-state line, has been met or will be avoided by our favorable action upon the finance docket applications before us, or some of them. Knowing this, we are unable to find and conclude that the record establishes that the extension by the Union Pacific or its subsidiaries of the line from Harriman to the Natron Cut-off is required by the public convenience and necessity, under the limitations imposed by the act.

The general principles which are to guide us are not difficult to establish. Congress has undertaken to develop and maintain, for the people of the United States, an adequate railroad system. It has recognized that as to individual carriers the preservation of the earning capacity, and conservation of the financial resources is a matter of national concern; that the property employed must be permitted to earn a reasonable return; that the building of unnecessary lines involves a waste of resources, and that the burden of this waste may fall upon the public; that competition between carriers may result in harm to the public, as well as in benefit; and that, when a railroad inflicts injury upon its rival, it may be the public which ultimately bears the loss. *Texas & P. R. Co. v. Gulf, C. & S. F. Ry. Co.*, U. S. (Mar. 1, 1926). Our conclusions herein are intended to accomplish such undertaking, and to avert such losses.

Here the conclusion is inescapable that the system proposed by the six finance applications is in the public interest, and is of public convenience and necessity. But it is clear that the public necessity can be met with equal convenience, if a large amount of expenditure be avoided by utilization, on fair and lawful terms, of existing facilities of the applicants, or those to be constructed, in such manner as to give substantially the same service as if all the lines involved were constructed. The duty of the carriers is plain, under a more pronounced policy of co-operation and co-ordination, to give interior Oregon railroad access to both the north and the south, and the benefits of reasonable competition, in such manner as to afford the greatest service consistent with the minimum of expenditure to accomplish such purpose. This will reduce the operating and carrying charges of all of the applicant railroads, and will not materially impair the service any of them affords, or deprive any carrier of substantial rights or rewards for its enterprise and investment. We shall endeavor to attach conditions to the certificates to be issued herein to accomplish such result, as required by the public convenience and necessity. The heretofore existing policy of the western carriers is in marked contrast with that which obtains in other sections of the country, and should be revised with a view to more intensive use of the transportation machine existing, and the avoidance of unnecessary expenditures in future development. But even in the west, there are many notable examples of joint use of important sections of track, with success. The recent arrangements for joint use of portions of the Southern Pacific and Western Pacific, and the suggestion by the Southern Pacific for a further development of that joint use in connection with its Modoc Northern project in the record before us, aptly illustrate what can be accomplished when the will is present. The Great Northern, Northern Pacific and Oregon-Washington, parties to the record before us, use the same tracks between Portland and

Seattle, Wash., certain minor mileage unconsidered. The Northern Pacific and Oregon-Washington appear to own and operate certain lines in Washington and Idaho, and to be contemplating the joint construction of other, intended, as here, to develop important timber areas. These are specified merely as illustrations. The record is not convincing that the mere use by the Oregon Trunk of the Natron Cut-off between Paunina and Klamath Falls would interfere with the use of the cut-off by the Southern Pacific for the principal purposes for which it was constructed.

While the attitude of the Union Pacific system as to the cross-state line is openly adverse to the requirement that it construct such line under the present conditions of ownership of the Natron Cut-off and the Willamette Valley lines, yet a careful scrutiny of its position in the light of its past construction leads to the conclusion that under appropriate circumstances it would complete that portion of its historic plan which is represented by the gap between Harriman and the cut-off. In no other way now known can its great investment from Ontario to Burns be made to yield its running and fixed costs. In this respect its situation is similar to that of the Oregon Trunk at Bend, with a high grade line 151 miles long, an incomplete fragment of a larger plan, built on standards contemplating a greater use than it can have if unextended. But the Union Pacific is making no suggestion to us for an extension of its line; rather, as stated, it opposes an order requiring it to do so. Its opposition is doubtless due in major part to its apprehensions as to the treatment it would receive in the division of traffic, if and when it should reach the Natron Cut-off, which soon is to become a main line of the Southern Pacific. What the Union Pacific could be required to do, upon this record, against its protest, is one thing. Our conclusion, previously expressed, is that the record in the Oregon Commission case cannot be depended upon to speak clearly as to the future traffic and its financial results, because of conditions changed since that record was made. This makes it unnecessary to determine the important questions of constitutional authority and of statutory construction raised. But it is another matter as to what we should permit the Union Pacific to do upon the present record, were it convinced of the business soundness of the project for the extension of its rails as long ago planned, to a connection with the Southern Pacific's line. We do not intimate what our determination of that question would be if an application by the Union Pacific

were before us. It is, however, appropriate because of the great importance of the subject and the changes which have occurred since the Union Pacific was before us as a defendant to the Oregon Commission's complaint, to suggest to that carrier a most careful review and survey again of the entire situation, in the light of the known facts, our present determination, and the policy of the law as it applies to connecting carriers. The Union Pacific has not come into the hearings upon any of the six pending finance applications, and what its position may be as to its duty in the development of the great section of the country under consideration, as now planned, we are not informed. In its review, it may properly take into consideration the feasibility of participation in the traffic through joint trackage arrangements with the Oregon Trunk. The president of the Great Northern Railway Company, testifying for the Oregon Trunk, strongly advocated a policy of co-operation which would result in the maximum of service with the minimum of construction. The Oregon Trunk, in brief and argument, affirmed this.

An order and certificate will be entered dismissing the complaint of the Public Service Commission of Oregon, in No. 14392; authorizing the construction and operation sought by the Central Pacific Railway Company for its Modoc Northern line, in Finance Dockets No. 4914 and 5111; authorizing the acquisition of control of the Nevada-California-Oregon Railway by the Southern Pacific Company; conditionally authorizing the construction of the lines sought by the Oregon Trunk Railway and Oregon, California & Eastern Railway Company in Finance Dockets Nos. 4810 and 4730, respectively; and conditionally authorizing the acquisition of control of the latter company by the Southern Pacific Company, as sought in Finance Docket No. 4941.

These conditions are found to be for the public convenience and necessity. No attempt will be made to prescribe details of the arrangement, which must be left to the carriers, but we shall be glad to use our offices in bringing about the desired result. In view of the importance of the matter, and the exigencies of construction we shall expect the various carriers to undertake in good faith to come to an understanding which will carry out our conclusions, with no unnecessary delay, or to notify us promptly of their rejection of the terms and conditions imposed. The record will be held open for such further proceedings and orders as may be necessary.

Authority to retain excess earnings under section 15-A of the act will be denied in each case where it is sought herein.

Proposed Lease of Virginian

WASHINGTON, D. C.

EXAMINER Haskell C. Davis of the Interstate Commerce Commission, in a proposed report, recommends a finding by the commission that the Norfolk & Western has failed to sustain the burden of showing that its proposed lease of the Virginian for 999 years is in the public interest and that its application be denied. He says the conclusions that the proposed lease would result in eliminating existing routes and channels of trade appears warranted by the record and that under the proposed lease all competition between the lines of the two companies would be eliminated. In his opinion the record clearly establishes "that the two lines are in direct competition between Virginia points" but he says that in view of the recommended disposition of the application upon the facts it appears unnecessary to consider extensively the various legal contentions raised by the state of Virginia as to the charter powers of the companies to effect such a lease. Also, he says, the testimony as a whole does not establish that the N. & W. could effect the operating savings which it anticipates.

Intervening petitions in opposition to the application were filed by the Commonwealth of Virginia, the State Corporation Commission of Virginia, the Chesapeake & Ohio, the Baltimore & Ohio, the cities of Norfolk, Va., and Princeton, W. Va.; the town of Salem, Va., the Norfolk-Portsmouth Freight Traffic Commission, and various other associations of business men and individual shippers. The chamber of commerce of Williamson, W. Va., intervened in favor of the authority sought.

In the commission's tentative plan the Virginian is grouped with the C. & O. in system No. 8. Shortly after the tentative plan was made public the N. & W. opened negotiations for the lease of the Virginian, but terms were not agreed upon. In August, 1924, a joint lease of the Virginian by the N. & W. and the C. & O. was proposed by the Van Sweringen interests, but the proposal was rejected by the N. & W. In February, 1925, new negotiations were instituted, which resulted in the draft of the proposed lease now under consideration. "The record shows that in the consummation of the proposed lease no bankers' commissions were involved, all arrangements having been made directly by the interested companies," the report says. The C. & O. claimed that as the commission had tentatively allotted the Virginian to it, it did not consider it necessary to take further steps toward securing control of the Virginian pending the issue of the commission's final plan for the consolidation of railroads. Some extracts from the report follow:

The Virginian and the N. & W. are substantially parallel from Norfolk to Kelleysville. Between Norfolk and Roanoke the lines are at no point more than approximately 30 miles apart. From Roanoke west to Kelleysville they are not more than 5 miles apart at any point and are in sight of each other for a large part of the distance. The two lines come in contact at Norfolk, Abilene, Valbrook, Roanoke, Salem, Merrimac, Norcross and Matoaka, and it is planned to connect them at Kelleysville.

Based upon the figures of January 1, 1926, the applicant, according to its evidence, will be obligated under the lease to make annual payments of \$8,204,789, plus the cost to the Virginian of maintaining its corporate organization.

The commission's tentative valuation of the Virginian, including the Virginian Terminal Railway, as of June 30, 1916, was \$55,420,314. The valuation engineer of the Virginian estimated the value of the properties, less depreciation, as of June 30, 1925, to be \$118,907,978. This amount was reached by adding to the commission's tentative valuation \$2,011,871 which addition, it is testified, has been recommended by the commission's engineering section to its bureau of valuation. To this total was added the net charges to capital account for additions and betterments to June 30, 1925, and prices were equated to a 1925 basis.

Witnesses for the N. & W. testified that the proposed lease will enable the applicant to avoid large capital expenditures that would otherwise be necessary in the near future. It is further testified that unified operation would effect an estimated saving of \$2,000,000 through the consolidation of car supply, would make unnecessary an expenditure of \$6,000,000 within the next five years for a third track on the east side of the Blue Ridge, Christiansburg, and New River hills, and ultimately an outlay of \$40,000,000 for double-tracking the Virginian. The president of the Virginian testified, however, that that carrier did not need additional running tracks at present, and that he did not know of any future necessity thereof.

Further testimony was offered by the N. & W. to the effect that savings in operating expenses totaling approximately \$2,000,000 will be effected. These savings are expected to result through the consolidation of coal deliveries and coal terminals, shop and engine terminals, passenger and freight stations, electric zones, car supply, and from unified train operation. If the proposed acquisition is authorized the N. & W. will use the Virginian as a third track. To handle economically Virginian westbound coal the N. & W., through one of its subsidiaries, proposes to construct a new line from Elmore to Wharnclyffe, 53 miles, at an estimated cost of \$13,887,000.

Lines Are in Competition

The conclusion that the two lines are in direct carrier competition appears inevitable from the record. There is strong competition between New River coal mined on the Virginian and Pocahontas coal mined on the N. & W., the coal being sold in the same markets and transported at the same rates. While admitting this to be true, the N. & W. classes it as market and not carrier competition. The traffic manager of the Virginian testified that his road meets very keen competition from the N. & W. Both carriers maintain off-line soliciting offices, in some instances at the same points, and solicit business in competition with each other. Between Roanoke and Norfolk, and at those points, the two companies compete for the same business, including passenger traffic. The competition extends to export, import, coastwise and intercoastal business through the port of Norfolk. The N. & W. does not participate with the Virginian in through rates on competitive business. The C. & O.-Virginian route via Deepwater is directly competitive with the N. & W. route for general traffic moving between the territory north of the Ohio River, including C. F. A. territory, and the northwest, and territory served by the Virginian and its connections in the southeast.

The Pennsylvania Railroad and its affiliated companies own 115,580 shares of preferred and 465,550 shares of the common stock of the N. & W. This is 50.2 per cent of the preferred and 29.6 per cent of the common outstanding. It is admitted that if the N. & W. desired to finance additions and betterments by the issue of bonds the Pennsylvania, through its ownership of a majority of the preferred stock, could veto the proposition, or any proposition for increasing the preferred stock. Four of the 11 directors of the N. & W. are either officers or directors of the Pennsylvania, or both. While the Pennsylvania does not own or control a majority of both classes of the N. & W.'s capital stock, it appears obvious that its large concentrated holdings give it a dominant voice in that company's affairs, with an absolute control over its security issues. The testimony is that the Pennsylvania is the greatest coal-carrying road in the country, and that it has always opposed any great development of the New River and Kanawha, W. Va., fields. Certain of the protestants allege that the execution of the proposed lease would give to the Pennsylvania the means and power of stifling the development of the low volatile fields of southern West Virginia as competitors of the Pennsylvania fields; that the Pennsylvania's interest in the N. & W. is a constant menace to the southern West Virginia coal operator; and that the adding of the Virginian to the N. & W., as contemplated by the proposed lease, would be destructive to the public interest.

The C. & O. introduced much testimony in an endeavor to refute the claims of the N. & W. with respect to the operating economies it would be able to effect. This testimony went into elaborate details, including grades, engine ratings, engine terminals, electrified zones, methods of operation, repair shops, use of facilities, etc. Considering the testimony as a whole it does not establish that the N. & W. could effect the operating savings which it anticipates. Witnesses on its behalf admitted on cross-

examination that they were unable to state how the Virginian would be operated, and that they could not know until after they had actually operated both properties.

C. & O. Proposes to Try for Virginian

The president of the C. & O. testified that if the pending application should be denied and the Virginian should be allocated to the C. & O., that company, or the Nickel Plate system, as the case may be, would make every reasonable effort to bring about the acquisition and control of the Virginian on terms and conditions that would meet the commission's approval.

The N. & W. objected to the evidence designed to show the result of combining the Virginian with the C. & O., for the reasons that such a proposal is not in issue, and the evidence has no bearing upon the question as to whether the execution of the lease under consideration would be in the public interest. It is true that the question as to whether the acquisition of control of the Virginian by the C. & O. would be in the public interest is not in issue. However, the evidence objected to would be material for its bearing upon the question as to whether the control sought by the N. & W. would be in the public interest, and in collateral support of the commission's findings in the consolidation proceedings.

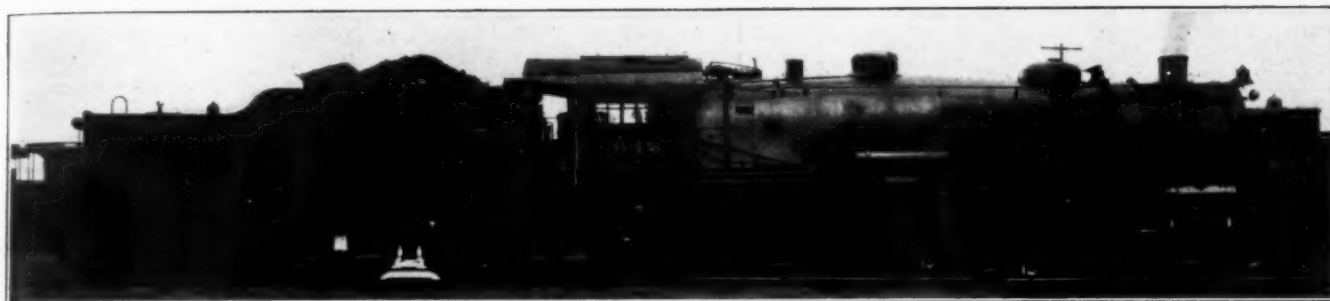
The Commonwealth of Virginia and its state corporation commission insist that the proposed lease is ultra vires the charters of both the N. & W. and the Virginian, and that both companies are prohibited from entering into the lease by the constitution and statutes of Virginia, because their railroads are parallel and competing. The record clearly establishes that the two lines are in direct competition between Virginia points. The charters of the Virginian and the N. & W. do not specifically authorize those companies to enter into the proposed lease, and the attorney general of Virginia cites a number of decisions of the United States Supreme Court to the effect that a railroad corporation can not lease its properties to another company unless specifically authorized by its charter, or aided by some other legislative action. In view of the disposition of the application upon the facts it appears unnecessary to consider further the various legal contentions.

The fixed charges of the N. & W. approximate \$5,370,000 a year. The added obligations under the lease would increase its charges over \$8,000,000 a year initially. The N. & W. claims that the earnings of the Virginian and the capital and operating savings which it expects to effect make the leasehold worth to it the price which it proposes to pay. Approximately 50 per cent of the savings in operation are expected to result from the routing of N. & W. eastbound coal over the Virginian between Kelleysville and Abilene. It appears that these expected savings should be reduced by an amount equal to the excess cost of steam over electric operation of the Virginian's line from Kelleysville to Roanoke. The 6 per cent guaranty on the capital stock of the Virginian would impose an annual charge of \$3,553,590. Deducting the probable operating savings leaves a large balance to be met through a reduction of capital charges. To what extent such reduction can be accomplished can not be determined at this time. Testimony for the N. & W. is that any economies to be effected will not be reflected in reduced rates if the company can prevent it. That the terms of the proposed lease are very favorable to Virginian stockholders is conceded. Since the organization of the company they have been paid three dividends, 4 per cent in each of the years 1923 and 1924, and 6 per cent in 1925. In the last year the earnings of the company on the common stock, with one month estimated, were less than 7 per cent. How much these earnings were augmented by the increased movement of eastbound coal due to the strike in the anthracite fields does not appear. That a railroad corporation earning less than 7 per cent on its common stock could not conservatively pay 6 per cent dividends appears self-evident.

Would Eliminate Existing Channels of Trade

The conclusion that the proposed lease would result in eliminating existing routes and channels of trade appears warranted by the record. The chief traffic official of the N. & W. testified that under unified operation of the Virginian and N. & W. the use of the Deepwater route would be discouraged, but that it would be kept open if found to be an efficient route. No reason appears why the N. & W. would be interested in maintaining a competitive through route via Deepwater, which would short-haul its own traffic. As heretofore pointed out, a substantial volume of traffic moves through the Deepwater gateway, and this traffic would be increased largely if the Virginian should join the C. & O. in joint rates on westbound coal.

Under the proposed lease all competition between the lines of the two companies would be eliminated. The president of the Virginian testified that the abolishment of competition in rates and service would injure any town through which the two roads pass, and this conclusion is corroborated by the testimony of the protestants.



Freight Engine Equipped with Train Stop, Standing with Receiver Over a Track Inductor

Nickel Plate First to Install Union Intermittent Train Stop

*Special pneumatic valves incorporated in new design of engineman's brake valve—
Electrical control simplified*

By J. H. Oppelt

Supervisor of Signals, New York, Chicago & St. Louis, Cleveland, Ohio

IN compliance with the order of the Interstate Commerce Commission, the New York, Chicago & St. Louis is installing an intermittent inductive automatic train stop between Ft. Wayne, Ind., and Chicago,

Locomotive equipment is being applied to 10 passenger and 44 freight engines.

Wayside Equipment Includes Checking Circuits

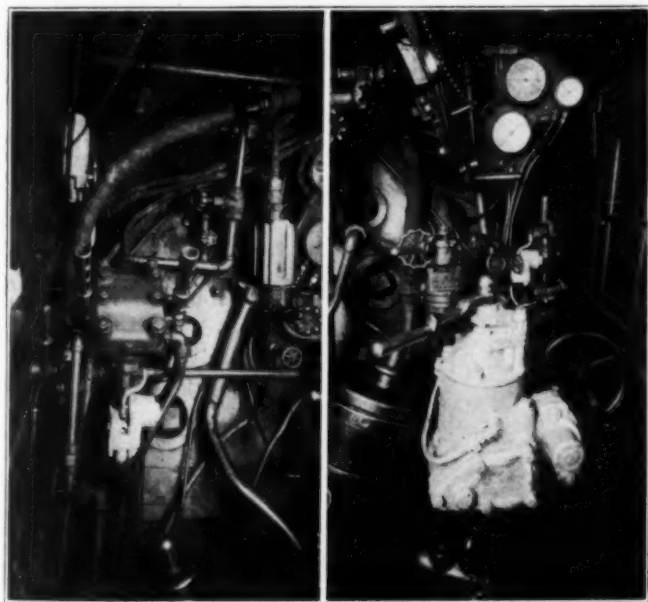
Automatic signals spaced approximately a mile apart are in service. In order to avoid the necessity of installing inductors on the sidings, the signals at the ends of the sidings were moved out from the switches a sufficient distance to allow the placing of the inductors on the main track. The inductors in each case are located approximately 75 ft. from the signals.

The wires from the inductor to the signal are carried in double groove trunking, so as to prevent the possibility of crosses in the inductor circuit. The caution position is controlled by the track relay of its own block, while the proceed position is controlled by the two blocks next in advance. The only modification of existing circuits consists of the addition of a pair of wires from the front contacts of the distant relay to the inductor coil and the addition of a home relay at certain locations where none was used formerly. In order to check against an open circuited inductor coil, the signal is so controlled that unless this circuit is closed, the signal will remain at "Stop."

Locomotive Circuits Were Simplified

The receiver, which consists of a laminated iron core with primary and secondary windings thereon, is attached to a specially designed journal box on the rear axle of the forward tender truck. The stick relay is housed in an iron relay case attached to the under side of the tender frame. The two acknowledging valves are located in the cab, one on either side so that they may be operated readily by the engineman and fireman.

The acknowledging circuit controllers are attached to the front of the cab. The acknowledging reservoirs, each of 800 cu. in. capacity, are attached to the cab bracket under the cab. The checking alarm, which is a single stroke bell, is attached to the right side of the cab, close to the engine-



Left Side of Cab, with the Electro-Pneumatic Control Valve at Rear, and the Fireman's Acknowledging Valve in the Foreground

Right Side of Cab Brake Application Valve and Cut-off Valve Incorporated with Engineman's Brake Valve

on the Chicago division of the Nickel Plate district. The materials for this installation are manufactured by the Union Switch & Signal Company and are being installed by the railroad company's forces. The installation covers 124 miles of single track and 16 miles of double track.

man. This alarm operates only when passing over an open inductor with the acknowledging circuit controllers reversed and is designed to check the integrity and correct functioning of the entire electrical system.

The electro-pneumatic control valve is placed in the cab at the most desirable location, depending upon the type of locomotive. The automatic brake application feature and the sealed cut-out are incorporated in the engineman's brake valve. The reset cock is placed under the right-hand running board ahead of the cab.

The Operation of the System

The principles of operation are the same as with other similar types of automatic stop. An open circuited inductor produces a stop when a receiver passes over it. The flux caused by the primary winding of the receiver is offered a path of lower reluctance through the iron

The pneumatic portion of the system is so designed that after an automatic application has been initiated, the engineman cannot release until the train has come to a stop and the apparatus restored to normal by proper manipulation of the acknowledging and reset valves. The engineman may, however, make a full emergency application of the brakes at any time, even though the automatic application is being made. A sealed cut-out valve is provided so that in case of failure of any part of the train stop system, the engineman may, by breaking the seal, move a small lever which cuts out the pneumatic part of the device. The breaking of the seal constitutes evidence that the pneumatic cut-out has been used.

Operation of the Pneumatic Apparatus

When the valve magnet operates to initiate a brake application automatically, main reservoir pressure from

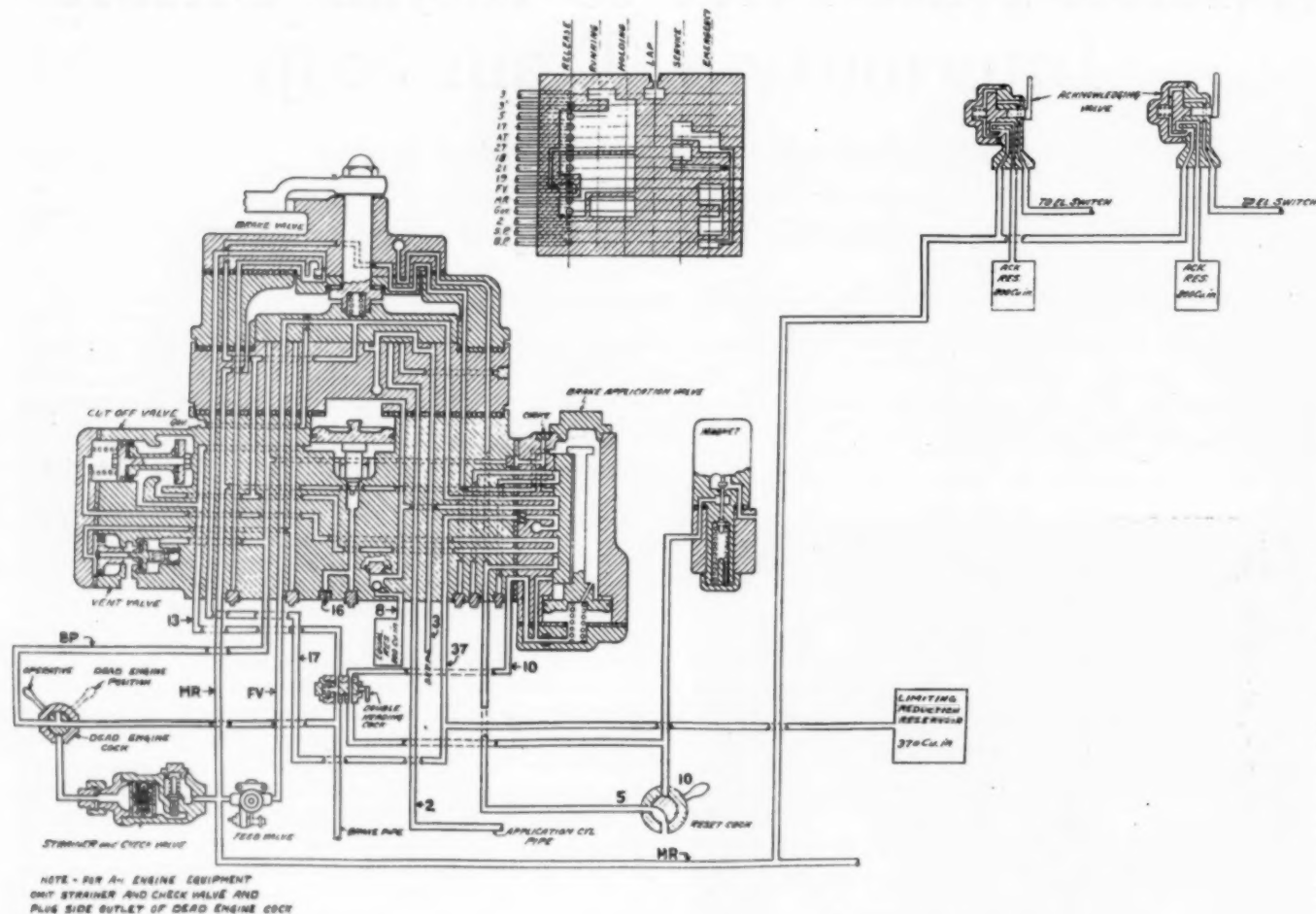


Diagram of Pneumatic Apparatus Used with the Union Intermittent Train Stop

inductor core. This induces a complete cycle in the receiver secondary which in turn neutralizes or reverses the current through the stick relay, causing it to open its contacts. The opening of the relay contacts de-energizes the receiver primary and the automatic brake valve magnet. The clearance between inductor and receiver is 2 in.

The brake application can be forestalled by simultaneous operation of the acknowledging valves by the engineman and fireman. Placing these valves in the acknowledging position permits air from the acknowledging reservoir to enter the air chambers of the acknowledging circuit controllers, closing the contacts and providing a path from the generator direct to the stick relay, which will be de-energized for an instant only and be re-energized immediately.

the under side of the brake application valve is vented to atmosphere through pipe 10; then the double-heading cock to the magnet vent opens. This allows the piston in the brake application valve to move down. This in turn moves the application valve to the applied position, the movement of the piston connecting up certain ports and passages which causes the following actions to take place: When the piston moves down the bottom port connects branch port from No. 10 pipe to No. 5 pipe, which in turn is vented to atmosphere through the reset cock. Passage 5 also comes up through the brake valve and is vented to atmosphere through the upper rotary valve in the release, running and hold positions. Feed valve pressure in the left hand chamber of the cut-off valve is vented to atmosphere through the third port from the bottom in the application valve. This allows the pressure

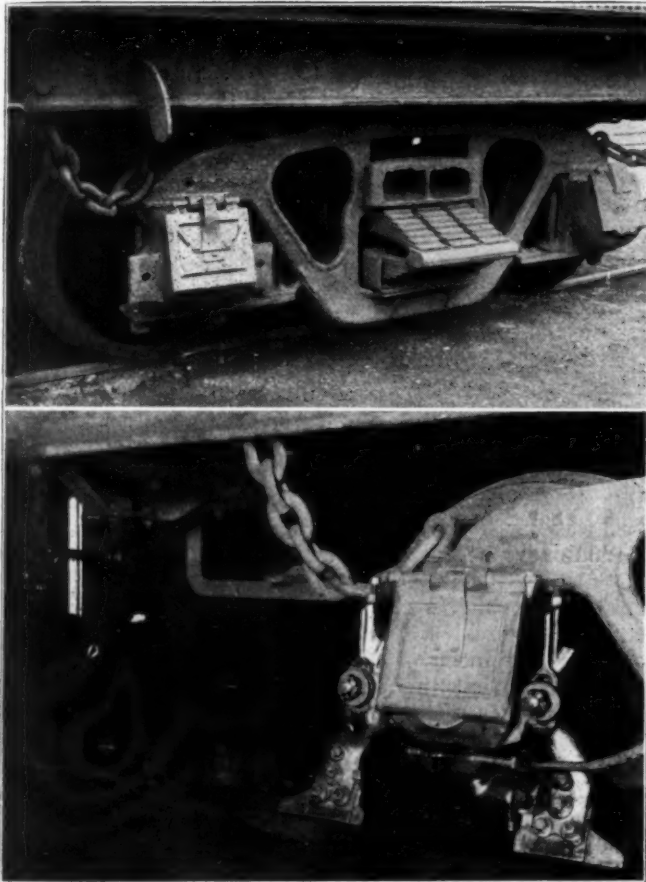
in the right hand chamber in the cut-off valve to compress the spring in the left hand chamber, allowing the piston to cut off all connection between the feed valve and the brake pipe, preventing the engineman from releasing himself until the application valve is returned to the running position.

The equalizing reservoir is connected to the limiting reduction reservoir through the fourth port from the bottom, a choke passage, and pipe 37 which gives a 24-lb. reduction in equalizing reservoir pressure, provided the brake valve was lapped at the time the application started. It is necessary that the engineman lap his brake valve when an automatic application is started in order to prevent losing all his train line pressure, as the limiting reduction reservoir is connected to atmosphere through the brake valve and upper rotary valve in the release, running, holding and service positions. The reduction in equalizing reservoir pressure allows the equalizing piston to raise, opening the port at the bottom of the reservoir and permitting train line pressure to blow down through a choke fitting in port 16.

In order to release an automatic brake application it is

the reset cock to the reset position. This closes the third outlet to atmosphere at the reset cock and allows main reservoir pressure to build up on the face of the piston in the brake application valve through the choke passage in the piston. As the pressure builds up, the spring pressure on the face of the piston returns it to the running position, again returning the slide valve to its normal position. When the piston has returned to the normal position, the reset cock is placed back in the running position and the engineman then releases the brakes in the normal way.

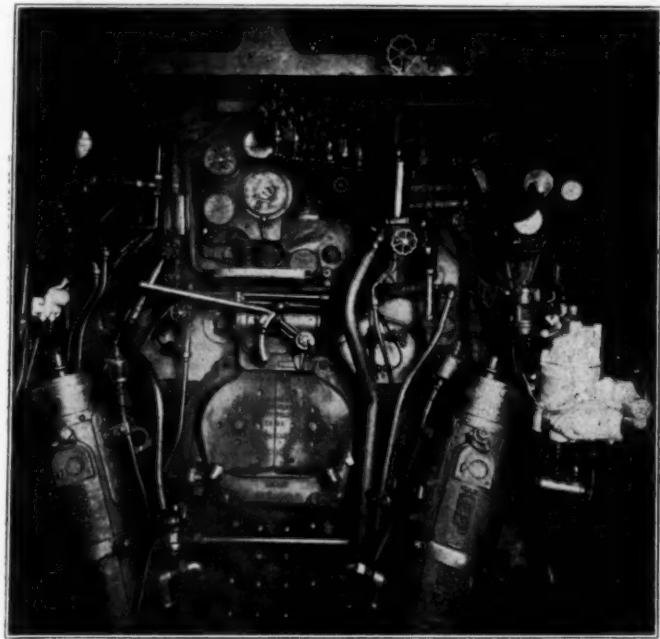
The acknowledging reservoir is a reservoir for supply-



Top—Special Journal Box With Cast Lugs for Attaching Receiver

Bottom—Receiver in Place, Relay Housing at Left

necessary to return the brake application valve piston to the running position by building up main reservoir pressure in the bottom chamber of this valve. This pressure is restored by three distinct manual operations. First, it is understood that the engineman lapped his brake valve when the automatic brake application started. Second, it is necessary to acknowledge by the operation of the acknowledging valves, which in turn electrically closes the outlet to atmosphere at the valve magnet. Third, the engineman must then get down off the engine to operate



General View of the Interior of the Cab

ing air pressure to operate the acknowledging relays, which are electrical switches. The source of supply is main reservoir pressure. There is a time element involved in the operation of the acknowledging relay which is governed by a choke. This time element restricts the period of time in which the engineman can acknowledge a yellow or a red signal indication to prevent being stopped automatically. The double heading cock has the No. 10 line through it so that when this line is blanked on a second engine of a double-header no automatic brake application is received by the second engine in passing over an inductor.

It is impossible to get an emergency application through the operation of the automatic equipment, but if an engineman should feel that a greater reduction is required than that given by an automatic application, he may make a further reduction by moving his brake handle to the service position. This additional application is made possible by venting to atmosphere the pressure in the limiting reduction reservoir through passage 17 and the brake valve.

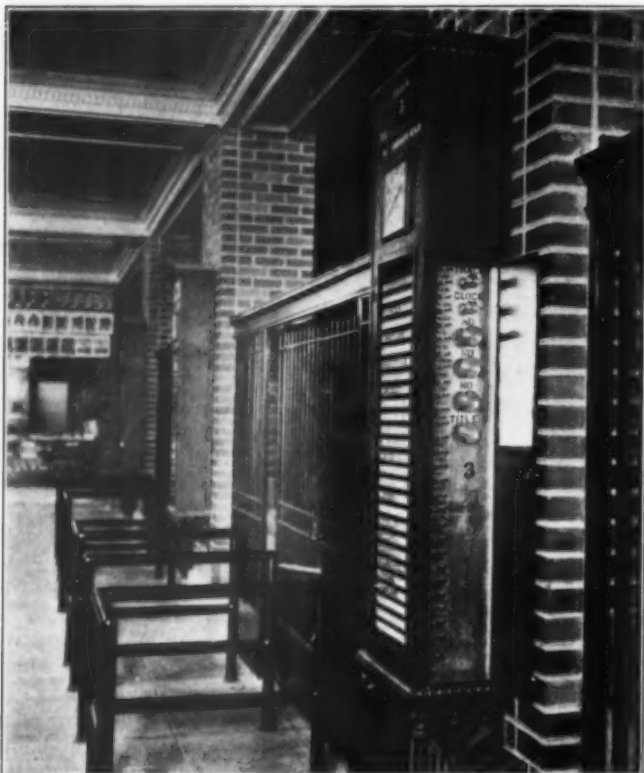
A vent valve is incorporated in the cut-off valve housing which permits an emergency application to be made manually at all times at the option of the engineman, regardless of whether an automatic brake application is in process.

This is accomplished by connecting the main reservoir to the face of the vent valve piston through the sand pipe passage. This overcomes brake pipe and spring pressure, breaking the seal, and venting the brake pipe directly to atmosphere.

Southern Pacific Installs Train Indicator of New Design

A TRAIN indicator of new mechanical design and of attractive appearance has been installed in the Southern Pacific's large passenger terminal at Sacramento, Cal., where it is reported to be giving satisfactory service. The indicator, which is the invention of Patrick Flanagan, chief engineer of the company's hospital in San Francisco, is so designed that the turning of a few dials and the manipulation of a few levers will provide a quick and accurate set-up for a train. After the departure of the train the indicator is cleared automatically by the pressing of a single lever.

The time of departure is indicated by a clock-face at the top of the cabinet, while the track number, together



View of Indicator, Showing Control Levers

with the name and number of the train, are shown in three slots above the clocks, all of these being actuated by dials in the control chamber. The face of the cabinet on which the station names are shown is protected by heavy glass upon which is painted a series of black enameled horizontal stripes, between which are exposed the bars bearing the station names. These bars are sector-shaped, one face carrying the station name in black letters on a white ground, while the other face is finished in black enamel to match the cross strips on the glass, so that when the indicator is cleared the face has the appearance of a blackboard behind glass. The bars are mounted pivotally in the side walls of the cabinet, with their axes eccentric to their centers of gravity, so that the name face is normally exposed to view in the spaces between the strips, remaining thus until it is turned up and inward by a weight-actuated master lever in the control chamber. The individual bars bearing the station names are brought into view by levers in the control chamber. The indicator is said to not only present a more attractive appearance

than those formerly used but enables a train set-up to be made accurately in less time than was possible with the old method.

"Valuation for Recapture" to Be Argued Before I. C. C.

WASHINGTON, D. C.

THE question of methods to be used and principles to be followed in ascertaining the values of the railroads for the purpose of applying the recapture provisions of the transportation act are to be argued before the Interstate Commerce Commission at Washington on June 23. The commission has assigned for oral argument on that date before the entire commission the excess income cases of the St. Louis & O'Fallon and the Manufacturers' Railway in which a proposed report by Examiner J. Paul Kelley was made public on April 10. This outlined a method of finding "value for recapture" by "less thorough processes" than those of the valuation act, by bringing up to date valuation data as of 1919, based on 1914 prices, thus obtaining a figure which he described as representing the "probable, necessary, reasonable investment remaining" in the property, and adding net capital investment since. An abstract of the report was published in the *Railway Age* of April 17, page 1079. This report was the first of its character, although the commission has pending a large number of excess income cases, and it has been understood that it is expected to make this a test case.

The conclusions of the examiner are characterized as "predicted upon theories of law that are revolutionary and radical" in the exceptions to the report filed with the commission by Clark & La Roe, attorneys for the two roads involved in this case. They assert that the case is an important one not only to respondents, but to the country and to carriers generally, because of the principles involved, and ask that the arguments in support of their contentions be heard by the full commission.

Edgar E. Clark was for many years a member of the Interstate Commerce Commission and Wilbur La Roe, Jr., was for a time its chief examiner. The exceptions filed object not only to the valuation methods proposed but also to the proposed finding that the two roads involved are not operated as a single system, and thus not entitled to combine their returns for the purposes of calculating net income.

"For the first time in the history of interstate commerce regulation," they say, "it is proposed that the commission shall hold, in substance, that separate physical identity is incompatible with system operation and that such physical identity is a controlling consideration; that the 'prudent investment' theory of valuation shall be applied in the computation of earnings that may or may not be subject to recapture; that prices as of 1914 shall be recognized as a proper measure of values as of 1923; that the statute shall be construed according to a dictionary definition of a single word, disregarding entirely the manifest intent of Congress, and that one part of a system should pay a substantial part of its earnings to the United States while another part of a commonly owned, managed and operated system shall be forced to accept less than a reasonable return or no return at all.

"Coming at this time, after years of litigation during which major principles have been settled by commission and court, the discarded theories now revived by the examiner must startle even the most radical proponent of feudal principles in the valuation and operation of public utilities."

Elects New President

F. F. Fitzpatrick becomes American Locomotive Company executive and W. H. Woodin, chairman

FREDERICK F. FITZPATRICK, president of the Railway Steel-Spring Company, was on May 14 elected president of the American Locomotive Company. This election was in accordance with the plans of the amalgamation of the Spring Company and the American Locomotive Company originally announced last March. W. H. Woodin, hitherto president of the American Locomotive Company, has been elected chairman of the board of that company. Mr. Woodin is also president of the American Car and Foundry Company, and is said to be the largest individual stockholder of the Locomotive Company. Alexander S. Henry, formerly vice-president of the Railway Steel-Spring Company, was elected president and Mr. Fitzpatrick chairman of the board of the Spring Company.

The Railway Steel-Spring Company will continue to operate as it has always done; no changes whatever are contemplated in the management or personnel.

The American Locomotive Company operates six plants and the Railway Steel-Spring Company also operates six. The locomotive plants are as follows: The Brooks Works at Dunkirk, N. Y., the Chester Works at Chester, Pa., the Schenectady Works at Schenectady, N. Y., the Richmond Works at Richmond, Va., the accessories plant at Richmond and the Montreal Works, owned through a subsidiary company, the Montreal Locomotive Works at Montreal, Canada. The plants of the Spring Company include two steel tire and steel-tired wheel plants—the Latrobe Works at Latrobe, Pa., and the Inter-Ocean Works at Chicago Heights, Ill.—and three spring plants, namely, the St. Louis Works at East St. Louis, Ill., the French Works at Latrobe, Pa., and the Chicago Works at Chicago Heights, Ill. In addition the Spring Company has a Canadian subsidiary, known as the Canadian Steel-Tire & Wheel Co., Ltd., which has a plant at Montreal.

One of the principal reasons for the merger of the American Locomotive Company and the Railway Steel-Spring Company was the desire on the part of the former to secure greater diversification. Those who have studied the locomotive market in recent years will appreciate that it has been particularly characterized by the sharp contrasts between fair years and extremely poor years. The year 1925 was one of the latter. The Locomotive Company's sales in that year totaled only \$27,773,-

493 and the company had an operating deficit of \$843,321. The contrast is apparent, in a comparison with the figures for 1923, for instance, in which year sales totaled \$90,000,000 and there was a profit after taxes of no less than \$12,000,000. Conservative management on the part of the Locomotive Company has met such varying conditions by investing the surplus of good years in Liberty

Bonds and other readily marketable securities. The Spring Company, of course, has had to contend with the changing railway market, but its more even course of business is indicated by the fact that its net earnings have varied in the past seven years only between \$1,841,159 in 1924 and \$4,394,354 in 1919. This variation is fairly wide, but not out of line with the varying conditions of railroad buying. The variation is much less, however, than that of the Locomotive Company. The conditions may be summarized by pointing out that railways always need wheels, tires or springs whether for new locomotives and new cars or for replacements on old equipment. They do not, however, always need locomotives, but buy them as a rule only when business and earnings are good.

Frederick F. Fitzpatrick, the new president of the American Locomotive Company, has been president of



F. F. Fitzpatrick

the Railway Steel-Spring Company since 1910. In 1898 he was appointed St. Louis representative of the Charles Scott Spring Company which was merged with the Railway Steel-Spring Company upon its organization in 1902. In 1905, three years after the formation of the Railway Steel-Spring Company, he was made general sales agent, with headquarters in New York. He was elected a vice-president, in charge of sales in 1907, and president in 1910.

It is presumably not by chance that the executive head in the present merger has been W. H. Woodin, who now stands forth as the leading executive in the railway supply field, heading as he does its two largest units. In Mr. Fitzpatrick, Mr. Woodin has an able associate who brings to the enlarged Locomotive Company the managerial skill that has made the Railway Steel-Spring Company the prosperous property that it has been.

It has been well said with reference to Mr. Woodin and Mr. Fitzpatrick that with them the American Locomotive Company is assured of as competent and enterprising management as it is possible to secure.

Labor Bill Passed by Senate

Vote is 69 to 13—No change made from form in which bill was approved by House

THE Watson-Parker railroad labor bill, abolishing the Railroad Labor Board and providing for the creation of boards of adjustment, a board of mediation to be appointed by the President, methods of submitting railroad labor disputes to arbitration, and when occasion demands, for the appointment of an emergency board by the President, was passed by the Senate on May 11 by a vote of 69 to 13, after five days of debate, in exactly the form in which the bill was passed by the House. This means that in essential particulars it was passed as it was drafted by committees representing the railway executives and the railroad labor organizations.

All efforts to amend the bill failed by large majorities, the one which caused the most discussion being that proposed by Senator Curtis, the Republican leader in the Senate, to authorize the Interstate Commerce Commission to suspend the operation of an arbitration award or a wage agreement, if of the opinion that it would involve an increase in wages or salaries not in the public interest. This was defeated by a vote of 64 to 12, most of those who voted for the amendment afterward voting against the bill itself.

Those who voted against the bill were: Bayard, of Delaware; Bingham, of Connecticut; Curtis, of Kansas; Hale, of Maine; Keyes and Moses, of New Hampshire; McLean, of Connecticut; Norbeck, of South Dakota; Phipps, of Colorado; Ransdell, of Louisiana; Robinson, of Arkansas; Underwood, of Alabama; and Williams, of Missouri. Of these all but Phipps, Ransdell and Robinson, had voted for the Curtis amendment together with McMaster, of South Dakota and Weller, of Maryland. A motion by Senator Curtis to recommit the bill to the committee on interstate commerce for further consideration and hearings was defeated on May 10 by a vote of 59 to 14.

The principal argument advanced against the bill was that it does not protect the public against an advance in rates which might be asked by the railroads to meet the cost of an agreement or an arbitration award increasing wages unreasonably, and it was contended that the more prosperous roads having earnings subject to recapture would not be so inclined to object to a wage increase, out of funds of which they could retain only half, as would some of the weaker roads. The advocates of the bill contended that the commission, without any specific new legislation, could refuse to allow the roads a rate advance if it thought the wages were unreasonable, just as it has several times in the past declined to grant rate advances asked by the roads mainly on the ground of increased expenses caused largely by wage advances.

There was also some objection to the bill on the ground that it does not contain "teeth" to prevent a strike and there was much dispute as to the results which have followed the creation of the Railroad Labor Board.

Senator Bruce of Maryland spoke several times in favor of various amendments to the bill but finally voted for it after all the amendments had been defeated decisively, some without a record vote. The Senate voted 57 to 19 against his proposal that the emergency board to be appointed by the President be "clothed with all the powers of investigation hereinbefore conferred upon any board of arbitration." It also voted 56 to 18 against his proposal

making special provisions for the adjustment and arbitration of disputes involving subordinate officials. Senator Phipps proposed an amendment substituting for the words relating to changes in conditions during the time a controversy was being considered by an emergency board the words: "and no strike shall be called or declared by the officers or members of any organization of employees," which was rejected without a record vote.

Just before the bill was passed Senator Norbeck offered an amendment declaring null and void "any declaration, pledge, promise or authorization, contained in section 15a of the transportation act of 1920, as amended, of a rate sufficient to pay a dividend, return, or profit to stockholders." This was defeated 54 to 22. After the bill had been passed he offered an amendment to the title of the bill reading: "A bill to increase the farmer's working day from 14 to 16 hours and to reduce the railroad man's working day from 8 to 7 hours."

Memorial to Senate Asked Reconsideration

A memorial addressed to the Senate under date of May 4, asking that the bill be referred back to the committee for further presentation of evidence and argument, was presented by Senator Curtis, signed by the Washington representatives of the National Grange and the American Farm Bureau Federation and joined in by W. G. Bied, receiver of the Chicago & Alton, on behalf of 20 railroads; officers of the National Association of Manufacturers and affiliated organizations; and by R. C. Fulbright, chairman of the legislative committee of the National Industrial Traffic League. The reasons for asking recommitment were stated as follows:

1. That your petitioners are formally authorized to present the judgment of millions of citizens of the United States whose interest and that of the public is adversely affected by the pending legislation. Among them is included many national and State associations of farmers throughout the United States, many executives charged with the operation of interstate carriers by rail, many organizations of railroad employees, whose rights and duties are seriously affected by said proposal, and who have had no opportunity to present information, argument, and opinion to your committee. They believe the measure in its present form imperils the paramount public interest in uninterrupted transportation and affords no protection against the imposition of new and excessive burdens upon the rate structure. Unless opportunity for such hearing is afforded there is no adequate means by which the matured opinions and new information of large groups of citizens, as yet unheard, can be presented to the membership of the Senate through its appropriate committee.

2. The issue presented is of unusual importance to the American people. Unless gross defects in the existing measure are corrected by amendment, in the light of accurate information and careful analysis of the existing proposal, it threatens with serious injury the transportation system of the United States and the imposition on it of great and hurtful burdens. It is therefore in the public interest to afford further opportunity to citizens of the United States to be heard and present information to your honorable body.

3. The necessity for such hearing by your petitioners is the greater since the vast majority of the organizations represented had no opportunity to present facts and argument to the Interstate Commerce Committee of the House of Representatives before his measure was acted upon by that body.

4. The rights of your petitioners and the paramount interest of the general public are nowhere protected by the provisions of this bill.

Debate on the bill was begun in the Senate on Thursday, May 6, with a speech outlining the purpose of the bill by Chairman Watson of the committee on interstate commerce. Senator Curtis, at once proposed his amendment to authorize the Interstate Commerce Commission, on its own motion, to suspend the operation of an arbitration award or any wage agreement, except one resulting from the intervention of the emergency board, if the commis-

sion is of the opinion that such award or agreement involves an increase in wages or salaries not in the public interest. The commission would be required to hold a hearing within 30 days from such suspension and "with due diligence affirm or modify" it.

Senator Bruce proposed his amendment to provide for a special board of adjustment to handle disputes between carriers and subordinate officials, saying that he had offered it by request of W. V. O'Neil, president of an organization of subordinate officials, and that he was not committed to it. After a short debate it was defeated without a record vote.

Senator Curtis, in speaking for his amendment, said he was surprised that the committee should have reported a bill "which absolutely neglects to protect the public interest" and that the board of mediation provided for in the bill "is of just about as much use as a fifth wheel would be to a wagon." He said he would have the people protected by holding up a "danger signal" by saying to the roads: "If you enter into an agreement that is going to increase wages so as to cause an increase in freight rates, we will stop it or we will refuse to give you the increase in freight rates." Senator Wheeler retorted that the amendment would be unconstitutional. Senator Curtis said he did not contend that the commission could interfere with a wage agreement. But that his amendment would "put the railroads on guard." Senator Neely declared that such an amendment is unnecessary because the railroads could not increase rates in any event unless the commission should approve it.

Senator Underwood supported the Curtis amendment, saying that Congress can pass laws providing that if one makes a contract in the future "it must be on terms which the Interstate Commerce Commission will hold to be within reasonable grounds to maintain a reasonable cost of transportation." Senator Williams of Missouri took a similar position, but also said that the railroads having excess earnings subject to recapture would have no interest in where the money goes and would be inclined to use it to buy peace with their employees.

Senator Wheeler said that for years the public has been clamoring for the railroads and their employees to get together and that now that they have agreed upon a plan for submitting their differences to arbitration they are told they should not be permitted to get together because if permitted to do so they may rob the public.

Senator Lenroot replied to Senator Williams' statement by saying that to use the excess earnings for wage increases the railroads would have to contribute to that increase 50 per cent of the money that belongs to the stockholders. He said that Congress may not delegate to the Interstate Commerce Commission power to modify a wage agreement without fixing any rule or standard to govern the commission in the performance of that act.

Senator Fess, speaking for the bill, said that the present labor board is an expression of an effort to adjust industrial disputes, stopping short of legal enforcement but leaving it only to moral enforcement, and that he did not believe anybody is yet ready to adopt a plan of compulsory arbitration. The present bill, he said "is written in accordance with the proper theory of adjustment and of contract."

A dispute between Chairman Watson of the committee on interstate commerce and Senator Curtis arose on May 8 as to whether the President was in favor of the bill. Senator Watson said that both he and Senator Curtis knew that the President was sponsoring the bill, but Senator Curtis said he did not know it and asked if Senator Watson could produce any evidence that the President had sponsored the bill. Later it was stated at the White House that the bill could not properly be considered an administration bill but that the President was in favor of

such a bill providing the public interest were properly protected. Senator Reed (Mo.) occupied most of the session on May 10 in speaking against the bill, particularly on the ground that the hearings on it had been declared closed before all who desired had had an opportunity to be heard. He read a telegram sent by W. G. Bierd of the Chicago & Alton to Chairman Watson asking that if the hearings were to be closed they be re-opened to allow a large group of roads to state their position. Senator Watson said that Mr. Bierd had been present during part of the final hearings and had said nothing about wanting to be heard until after he had returned to Chicago, and that the committee had voted not to re-open the hearings because it felt it had heard sufficient of the arguments on both sides and had many other matters to attend to.

Statement by L. F. Loree

L. F. Loree, president of the Delaware & Hudson, authorized the following statement on May 7 in criticism of the labor bill on behalf of the twenty carriers that opposed the bill:

"The independent executives oppose the Railroad Labor Bill about to receive the consideration of the Senate:

1. Because it claims but does not provide adequate security against uninterrupted service in event of a labor dispute. The public firmly believes that such disputes should be settled without depriving it of transportation. We cannot give public approval of any bill which omits preventive protection against the legal and social irresponsibility which produces the British situation.

2. The independent executives view with grave disapproval the attempt to abolish a policy of public control of wage agreements and awards. It means public control of income and no control of expense. It means the public foots the bill without effective preventive review or control of the chief element of operating cost—wages. It means railroad executives charged with providing adequate transportation at reasonable rates are exposed in the future as they have been in the past, to bad bargains without effective protection against improper pressure. This was the position taken by the railroad executives through their chairman, Mr. Holden, and their counsel, Mr. Thom, in opposing the Howell-Barkley bill. We insist upon continued recognition of this principle in our own interest and that of the public.

3. The existing machinery of negotiation and adjustment is ample to establish and maintain sound employment relations and adjust differences either by arbitration or reference to a public tribunal. The proposed bill adds nothing to the existing facilities at our disposal, privately and publicly, except the abolition of effective recognition of the public interest in and control of unreasonable wage agreements and awards.

4. Unless the pending bill is effectively amended to assure that minimum degree of public restraint necessary to obligate the parties never to interrupt train service during a period of investigation and to keep alive public control of expense as well as income, this bill will work a revolution in rate making and seriously jeopardize our present satisfactory employment relations, local to each system.

"The pending bill denounces a function of government and replaces it with the ministerial function of a private citizen. It surrenders a right of government that has been only too hardly won. In view of what is happening in England, where there is a complete suspension of transportation resulting from a 'sympathetic' strike of railway workers, this country cannot afford to return railway labor disputes to the old mediation system which has so signally failed in the past."

Big Attendance at Fuel Convention

Four-day meeting brings out executives, officers from all departments and many men from engine and train service

A REGISTRATION of over 1,150 members and guests was recorded on the first day of the eighteenth annual meeting of the International Railway Fuel Association held at the Hotel Sherman, Chicago, which was in session May 11 to 14, inclusive. With a total membership of approximately 1,200, the large initial registration is significant of the increasing interest being taken in the activities of this organization and of the importance of its efforts as viewed by railway officers.

In continuance of a practice which proved highly successful at last year's sessions, the subjects were grouped so as to include those of interest to operating men on the first day; accounting, engineering and purchasing men on the second day, and mechanical men on the third day.

The principal addresses at the opening sessions were made by A. E. Clift, senior vice-president, Illinois Central, and D. H. Pape, assistant to executive secretary, National Coal Association. Mr. Clift told of the remarkable progress of American railroads. An abstract of his remarks will be found elsewhere in this issue. Abstracts of the other addresses and committee reports presented at the earlier sessions follow.

Factors Affecting Fuel Cost and Distribution

By D. H. Pape

Assistant to Executive Secretary, National Coal Association

The charge is frequently brought against the bituminous coal industry that it is poorly organized and suffers from chronic over-development. Over-productive capacity is admitted, but the amount of over-development is by no means as great as is popularly supposed.

Excess capacity, in the sense of capacity in excess of average demand, is a characteristic of all progressive industries. Progress is brought about by the frequent establishment of new competitors with low costs, a resulting struggle for existence and survival of the fittest. While that method of progress is ruthless, it is also most highly efficient and results in giving consumers the commodities they need at low and consistently decreasing prices. In other words, a certain amount of excess capacity is economically desirable. There is a greater excess of capacity in the bituminous coal mining industry than is needed to stimulate progress. The responsibility for that condition does not rest upon the industry. To meet the needs of the country and its allies during the war the greatest pressure was put upon the industry to enlarge its output to the limit during those years. How well the industry responded is indicated by the fact that in the year 1918 it produced no less than 579,000,000 tons of coal, an amount not needed in any year since then. Pressure of war necessity resulted in the opening of large numbers of new mines. Many of the excess mines opened during the war remain as a handicap to the industry.

In measuring the extent of existing over-capacity, it must not be forgotten that the industry has to adapt its operations to a fluctuating demand for its product. Mines

equipped to produce only our weekly average of 10,000,000 tons of coal would fail the country at a time when it needed 12,000,000 or 13,000,000 tons. So long as demand fluctuates both as between years of active business and years of depression, and as between different seasons of the year, excess capacity does not begin until the peak demand has been taken care of.

According to the most recent authoritative engineering estimate of the total bituminous mine capacity of the country, it amounted in 1924 to 791,000,000 net tons. As the consumption of the country in 1924 was only 483,000,000 tons, there appears at first sight to be an excess capacity of 308,000,000 tons.

For several weeks during the anthracite strike, the country called for practically 13,000,000 tons of bituminous coal, which is at the rate of 676,000,000 tons a year. On that basis the excess capacity was reduced to 115,000,000 tons.

Elimination of Excess Capacity Desirable

The country would be benefited economically by eliminating the need of capacity to meet peak demands by bringing about as close an approximation as possible to uniform demand throughout the year. This excess capacity over and above a reasonable margin of safety is the capacity which the railroads and the bituminous industry are vitally interested in seeing reduced and eventually wiped out.

The consuming public has refused to consider the effect of equal distribution of its purchases over the year in holding down to the minimum the capital investment in the coal industry and the consequent reduction in capital interest charges, in reducing the actual costs of production or in creating the maximum of efficiency in the manpower employed in the industry through the permanent continuous full-time operation of the industry over at least 280 days per year. Full working time would force into other productive work an excess man-power of more than 200,000 miners; it would reduce mine overhead and permit of conservation of our coal resources through increased efficiency in extraction.

In placing the responsibility directly at the door of the consuming public, I do so with full appreciation of the fact that the bituminous industry as a unit, the transportation system as a unit, and labor as a unit have their respective obligations to fulfill in solving the economic problems of the bituminous coal industry, but I submit to you that unless the coal consuming public recognizes its obligations and will agree to accept its coal requirements in reasonably equal distribution over the year, it will be impossible for the railroad system, the coal industry, or labor to render that full measure of economic efficiency of which these combined interests are capable.

The number of men employed in the bituminous coal mining industry in 1923 was 705,000 and the average days worked was 179. These men produced an average of 4.5 tons per day worked. If the mines had all worked the theoretical 280 working days in the year, the total output could have been produced with 448,000 men. This indicates a theoretical overmanning of the industry to the extent of 257,000 men which could be eliminated only

through such equal distribution of coal as will in time largely eliminate the excess mine capacity.

The bituminous industry would benefit through increased efficiency brought about by the decrease in total labor supply and its continuous employment. Society would save the productive effort of that excess labor through its employment in other industries, and I think you will concur in the opinion that in the event of labor difficulties in the bituminous industry of the kind that once or twice disturbed the industrial peace of the nation and kept the coal industry constantly before the public eye, would be largely eliminated.

The production of bituminous coal in 1923 amounted to 565,000,000 tons and the estimated mine capacity, using the 280-day basis of the coal and coke committee, was 883,000,000 tons. The capacity, therefore, exceeded the actual demand or production by 318,000,000 tons. From a statement of the United States Coal Commission, prepared from reports received from mine operators, the average investment in the bituminous industry for the years 1918 to 1922, inclusive, was in round figures \$6.00 per ton of production. This would indicate a total investment in the bituminous industry of \$3,390,000,000 for the production above mentioned for 1923. If this investment was translated into investment per ton of estimated mine capacity for the year 1923, 883,000,000 tons, we would have \$3.84 per ton. Apply this capacity figure to the estimated excess mine capacity of 318,000,000 tons and you have the amount of excess capital investment in the bituminous industry in the year 1923 of \$1,220,000,000 service in its seasonal coal requirements.

In addition to its responsibility for this huge economic waste of capital, society is properly chargeable with the interest on that excess investment. At six per cent, it would amount to \$73,000,000, and while I regret to admit that the coal producers of the country are so unbusiness-like, for the past two or three years they themselves have absorbed most of this carrying charge. Industry must survive. Under the inexorable law of economics, the consuming public will eventually have to pay the cumulative interest charges on this excess capital investment and rightfully so, for the investment has been made to give the public the service it has demanded.

Fluctuating Requirements Burden Railroads

In my opinion the refusal of the coal consuming public to permit the mining and transportation of its coal requirements at a uniform rate throughout the year has burdened the railroad systems of the country with a proportionate expansion in that part of its total investment which can be allocated to coal transportation amounting to even more than the excess capacity investment in the bituminous industry itself. I do this recognizing that the railroads themselves are only partially responsible for this condition, insofar as they fail to allocate their purchases throughout the year in such a way as to serve as an equalizing factor in the total demand for coal.

H. A. Cochran, Coal Traffic Manager, B. & O., testified before the Interstate Commerce Commission that in 1921, \$4,423,000,000 of railroad property in the United States was allocatable to bituminous coal. On the basis of the amount of bituminous coal shipped by rail that year, namely 371,000,000 tons, the amount invested per ton handled was \$11.91. To give you a conservative estimate, I have used Mr. Cochran's figure and applied it to the bituminous shipments by the railroads in 1923, which gives an investment per ton handled of \$8.74.

The total owned coal and coke cars, Class I railroads, as of January 1, 1926, was 995,000. Eliminating bad order cars and those conceded to be unsuitable for coal loading, we have 677,000 for coal and coke. Of this

number, approximately 510,000 are actually in bituminous coal service and the balance are allocated to anthracite and coke. We find that if coal cars made the same turn around that all cars in other freight service evidently made in 1925, it would only require about 450,000 cars loaded with 50 tons each to take care of the consumers' requirements.

Making the same turn around as cars in other service, these cars would carry 673,000,000 tons. This figure, therefore, represents the bituminous coal carrying capacity of the transportation system of this country, providing that the consuming public were agreeable to having their coal requirements delivered to them in equal monthly distribution over the year.

Of the total number of car loadings of coal and coke in 1925, which we have found to be in round numbers 11,000,000 cars, there is something like 1,800,000 carloads of bituminous. At an average loading of 50 tons per car, that accounts for the actual movement. Applying Mr. Cochran's estimate of the railroad capital investment properly allocatable to bituminous coal to the railroad bituminous coal carrying capacity, we have an investment per ton of capacity of \$6.50. Now, if we take the amount actually transported, from the capacity figure, we will have an excess bituminous coal transportation capacity of 213,000,000 tons. Applying the capacity per ton investment figure to this excess capacity figure, we arrive at the excess capital investment of the railroads in that part of their total investment allocatable to the transportation of bituminous coal of \$1,400,000,000.

The carrying charges on this excess investment at six per cent amounts to \$84,000,000. You will agree that this excess investment and the resultant heavy carrying charge is not chargeable to mismanagement or inefficiency on the part of the railroads. It is proof rather of the extent to which they have gone to render the consuming public up-to-the-minute service in the transportation of its coal requirements as called for. That this is being paid by the public is indisputable.

I suppose the railroads and the bituminous industry should not be concerned if the consuming public demands this service and are willing to pay for it in the way of carrying charges on the excess capital investment in both. I have said before that the obligation to improve the situation lies principally at the door of the coal consuming public. I am afraid it does not fully realize this fact. The duty of informing it of the true conditions and of persuading it to meet the issue squarely and to correct it at an early date, is the obligation that rests upon the bituminous industry and the railroads of this country. This is especially true if we expect to get the full measure of efficiency out of these industrial machines, if we expect to level out the load factor, if we expect to reduce some of the excess capital investment and protect a reasonable profit on the capital actually required for the efficient conduct of these industries; and if we expect to reduce the cost of coal to consumers, and thereby increase their purchasing power.

Report on Divisional Fuel Meetings

For real accomplishment in fuel economy, reliance must be placed on the regular orderly functioning of an adequate permanent organization continuously supervising the features of the operating which effect the relative economy in fuel use.

One of the best schemes for increasing interest in fuel conservation is the holding of divisional or district fuel meetings, or the equivalent, preferably divisional meetings. Essential to the success of this plan is the organizing of the fuel committee. The committee should

consist of: (1)—representative from the general office in charge of fuel conservation; (2)—division superintendent and all of his staff officers; (3)—master mechanics, roundhouse foremen and other employes holding supervising positions such as to warrant their attendance; (4)—representatives from train, engine and yard service; (5)—such other employes as the superintendent deems advisable to have on committee.

Program of Fuel Meetings

The following plan is submitted as a basic program of procedure:

The superintendent will act as chairman. In his absence the meeting should be conducted by the assistant superintendent or other staff officers. A qualified stenographer should be appointed secretary.

Roll call of the committee.

On divisions where fuel records are compiled, a fuel chart should be displayed. It is suggested that the upper part of chart be in the form of a graph, showing fuel performance separated to freight and passenger service for approximately a two-year period, using heavy lines to indicate fuel and dotted lines to indicate locomotive load. The lower part of chart should show the following information for the previous month and the same month a year ago:

FREIGHT SERVICE	PASSENGER SERVICE
Locomotive miles	Locomotive miles
Gross ton miles	Car miles
Total fuel consumed	Total fuel consumed
Fuel per 1,000 G. T. M.	Fuel per car mile
Ave. tons per loco. mile	Ave. cars per loco. mile

Gain or loss in both services should be reflected. After explaining this chart those present should be given an opportunity to present their views as to the cause of loss, should there be a loss in either service. Other statistical reports bearing on fuel consumption should be explained and discussed.

Old suggestions: Action should be taken on matters carried over from previous meetings.

New suggestions should be classified as follows:

Distribution of Fuel—Items pertaining to purchase, inspection, quality and distribution of fuel furnished.

Views of Engine Crews Concerning Fuel Furnished—This heading is self-explanatory.

Motive Power Items—Matters concerning locomotive conditions, changes in design, proper assignment of power, terminal consumption, terminal practices and power plant practices. Observation reports from road foremen and fuel supervisors to be submitted and discussed.

Car Department Items—Matters concerning car conditions, car failures, terminal inspection, break-in-twins, hot boxes, leakage in brake pipes and signal lines, etc.

Transportation Department Items—Train delays, train dispatching, train loading, train schedules, train make-up, etc.

Signal Department Items—Location, maintenance and operation of signals.

Maintenance of Way Items—Track conditions, slow orders and speed restrictions, condition of steam and air lines, water facilities, condition of water, grade and curvature conditions, sidings, etc.

Co-operation—Items dealing with departmental co-operation.

Education—All matters pertaining to the education of employes. Educational talks by servicemen of various supply companies, who should be invited to meetings and given an opportunity to explain the construction, main-

tenance and operation of special devices for the benefit of enginemen, firemen and others present.

General—Items not classified.

Reports of the Meetings

In order that both officers and employees may know what is accomplished at fuel meetings, your committee desires to lay stress on the minutes covering these meetings. They should be carefully prepared and should show names and occupations of all who attend the meeting. All discussion should be shown in detail. A docket number should be assigned to each suggestion as received, and those numbers carried monthly in the minutes showing progress reported until final disposition by either adoption or rejection.

A summary of some kind should be carried in the minutes of each meeting and the following is suggested as an example:

DIVISION FUEL MEETING	SUMMARY	BLANK DIVISION
Number of meetings held.....		8
Number of men present:		
Representing management	102	
Representing employees.....	383	
Total number of men present at meetings.....	485	
Average number of men present at meetings.....	60	
Average time of meetings in session.....	3 hours	
Total number of suggestions received and discussed.....	88	
Total number of suggestions adopted.....	47	
Percent of those adopted to total number proposed.....	53.4	
Number still under consideration.....	26	
Number postponed because expense necessary to install not justified.....	0	
Number dropped account considered impracticable.....	15	

Some of the railroads assemble their various Divisional Committees into one big meeting annually, at which time the president and other executive and general officers meet with them and review the activities of the past and outline plans for the ensuing year. This plan has the endorsement of your committee.

Fuel Meetings Better Than Literature

There are many ways of presenting fuel economy to the rank and file of our railroads. Recourse in the past has often been made to the wholesale distribution of free literature to enginemen. It has been appreciated by some, but generally unless there are some special requirements or incentives, such as examination, it is doubtful whether most men have studied their literature with any degree of comprehension or intelligence. The ordinary run of men are more inclined to absorb through oral instruction, visualization and practical demonstration than by literature. For this reason your committee feels there is no better way or means to discuss the fuel economy problem with all its ramifications than through the medium of the division fuel meetings, and that additional interest would be stimulated, especially in so far as increasing voluntary attendance of the rank and file is concerned, if, in addition to the regular procedure, special attractions were available.

Quite a few railroads who have gone to the trouble of preparing special motion picture films, lantern slides, etc., for use on their own property to stimulate interest in fuel conservation, and after these pictures have been shown a certain length of time, unless new scenes are substituted from time to time to keep interest alive, they become obsolete in so far as that particular railroad is concerned. There are perhaps many coal and railroad supply companies who have gone to considerable expense and trouble in procuring motion pictures and lantern slides of their particular operations or devices for the sole purpose of showing and advertising their product. Any of the above mentioned attractions would, in our opinion, tend to create a new interest in the matter of attendance, especially at the divisional fuel meetings on railroads where they were being shown for the first time.

Your committee suggests to this convention that the

Report on Recording Miscellaneous Fuel Consumption

This form is not intended to meet requirements of accounting practice. It cannot be used to check charges to primary accounts, for the reason that the allocation of charges to the various accounts, insofar as a great many items of miscellaneous fuel is concerned, is arrived at by charging the entire expense of certain operations, such as power plants, to clearing accounts and prorating, on a

As to the utility of this form as a means for checking fuel consumption, your committee feels that this could be best accomplished by comparing similar month's fuel consumption at the various plants. Where any considerable increase was noted the matter could be taken

RAILROAD Form									
DETAILED STATEMENT OF MISCELLANEOUS FUEL CONSUMPTION & MONTHLY SUMMARY OF ALL FUEL ISSUED									
DIVISION			MONTH OF			192			
"A" POWER PLANTS & STATIONARY BOILERS			"B" WATER STATIONS			"C" HEATING			
Location	TOTAL TONS	PER CENT TO GRAND TOTAL	Location	TOTAL TONS	PER CENT TO GRAND TOTAL	Location	TOTAL TONS	PER CENT TO GRAND TOTAL	
						STATIONS - OFFICES			
						TOWERS - INTERLOCKING			
						SHOPS - ENGINE HOUSES			
						HEATING CARS			
						CROSSING SHANTIES			
						SWITCH SHANTIES			
						CAMP CARS			
"A" Total			"B" Total			"C" Total			
"D" COAL & ORE DOCKS - GRAIN ELEVATORS			"E" SAND STOVES			"F" LOCOMOTIVE FUEL FOR OTHER THAN ACCOUNTS 382-394			
						WORK TRAIN ENGINES			
						WRECK " "			
						SUPPLY " "			
						TRIAL TRIP ACCOUNTS			
						EXCLUSIVE SHOP SWITCHES			
"D" Total			"E" Total			"F" Total			
"G" STEAM CRANES			"H" INDIVIDUALS & COMPANIES			"I" ALL OTHER USES			
"G" Total			"H" Total			"I" Total			
"J" RECAPITULATION			"K" SUMMARY OF ALL FUEL ISSUED						TOTAL TONS
ITEM	TOTAL TONS	PERCENT TO GRAND TOTAL							
TOTAL A			LOCOMOTIVE FUEL YARD ACCT. 382						
" B			LOCOMOTIVE FUEL ROAD PASSGR. ACCT. 394						
" C			LOCOMOTIVE FUEL ROAD FREIGHT ACCT. 394						
" D			TOTAL LOCOMOTIVE FUEL ACCOUNTS 382-394						
" E			TOTAL MISCELLANEOUS FUEL ITEM "J"						
" F									
" G									
" H									
"J" Total			TOTAL INDIVIDUALS & COMPANIES ITEM "H"						
OFFICE OF			GRAND TOTAL FUEL ISSUED						
DATE									

It is true that this method of checking will give only the total fuel consumed at each plant and will give no idea of the service rendered. It is also true that at some of the smaller operations, especially heating plants, it is customary to put in fuel in the early fall sufficient to last throughout the winter months, making it very difficult to obtain a check on the monthly consumption. For such small plants, however, with the aid of form illustrated and the index card a yearly average consumption could be obtained. It must be remembered, however, that the mere fact that a report of this nature is being distributed

to the various operating officers will have a tendency in itself to aid in the conservation of fuel at miscellaneous operations, if for no other reason than that the distribution of these reports will cause more intensive checking.

In conclusion, this committee wishes to take this opportunity to express their appreciation for the assistance rendered by the Railway Accounting Officers' Association, through the medium of its sub-committee on Cooperation with the International Railway Fuel Association. All the suggestions offered by this sub-committee have been incorporated in the form shown in this report.

This report was presented by the Standing Committee on Accounting, Distribution and Statistics, comprised of the following members:

B. A. McDowell (B. & O.), Chairman; E. J. Brennan (C. G. W.), E. E. Evans (Y. & M. V.), C. W. Foss (*Railway Age*), R. R. Hibben (M-K-T), C. F. Needham (Can. Nat.), J. M. Nicholson (A. T. & S. F.), C. L. Perry (R. F. & P.), H. Piolett (L. V.), C. S. Pond (S. P.), G. G. Ritchie (C. & O.), W. C. Shove (N. Y., N. H. & H.), J. J. Stahl (Sou.), W. J. Tapp (D. & R. G. W.), J. J. Tobin (B. & M.) and O. E. Wolden (M. St. P. & S. S. M.).

Discussion

In the discussion considerable interest was evidenced in the methods used on various railroads for properly charging the fuel used on work train locomotives, it being suggested that the establishment of a standard unit would be desirable. It was also suggested that the attention of accounting officers and fuel accountants be directed to the fact that some roads have a practice of absorbing fuel inventory losses by increasing the unit price, which results in lower unit performance as figured in gallons or pounds per gross ton-mile. The consensus of opinion indicated such approval of this suggestion that the committee chairman announced that this factor would be considered in next year's report.

Report on Inspection, Preparation and Analysis of Fuel

In its report, the Committee on Inspection, Preparation and Analysis of Fuel described in considerable detail the process of mining bituminous coal, pointing out the principal characteristics of the seam which affect the amount of noncombustible material likely to be brought down with the coal, and setting forth the various methods employed at the mines of cleaning and preparing the coal for shipment. The report indicates that all of these things should be observed and understood by railroad mine inspectors.

What Fuel Inspectors Can Do

In discussing the duties and opportunities of railroad fuel inspectors the report continued in abstract as follows:

Inspectors should be given authority to reject any coal at the mines that in their opinion is not up to the standard required by contracts or that contains an excessive amount of impurities or slack, as well as any that shows laxity in preparation. In cases where rejections are found continually necessary, as a final resort, on recommendations of inspectors, embargoes should be placed on mines, and these embargoes kept in force until such time as the inspectors advise their superiors that improvement has been made in the preparation of the coal to such an extent as to warrant lifting the embargo.

Top inspection of coal in cars is not representative, and proper inspection can be given only in mines, at tipples and when railroad cars are unloaded. Notwithstanding the fact that inspectors may make thorough inspections at

the source or point where coal originates as often as practicable, there are instances of coal of inferior quality being shipped, but these shipments are discovered by efficient inspectors at the yards or terminals and are rejected. To illustrate forcefully the possibility of such an occurrence, we can relate a case of remarkable watchfulness on the part of one inspector who one day discovered and rejected 18 cars of inferior coal that had been shipped to a coaling station. Had this coal gotten on locomotive tanks, there is no doubt that considerable loss would have been sustained and trouble incurred.

Inspectors should at all times insist that before equipment is loaded with coal at mine tipples, all foreign substances, such as wood, both small and large pieces, bolts, nuts, or any other extraneous matter, be removed from railroad cars as well as mine cars in order to eliminate the possibility of failures on stoker equipped locomotives.

The facts indicate that it would be highly desirable for all large consumers of fuel coal, and the railroads in particular, to maintain a fuel inspection organization. An organization of this kind should be constituted as a separate functioning unit under the purchasing department, to which it should be advisory, but under the direct supervision of a chief executive to whom the local or district fuel inspectors are responsible. Through such a body the work of inspection becomes centralized and co-ordinated, and the results obtained are more reliable than through haphazard or unorganized methods of inspection.

The Cost of Inspection

Naturally the question arises whether such an inspection organization would be an expensive proposition to maintain. From actual figures obtained from several of the largest railways of the country, that are carrying on this work, we find that fuel inspection is maintained at a cost ranging between 0.3 cents and 1 cent per ton. This appears to be an economical expenditure, considering the results obtained in protecting the operating department.

Results are reflected in a reduced number of engine failures, and traffic proceeds without interruption.

The report concluded with a description of the standard method of sampling and analysis of the American Society for Testing Materials. A brief description of the method of inspecting fuel oil was also included.

The report was signed by Malcolm Macfarlane (N. Y. C.) Chairman, D. E. Dick (B. & O.), C. I. Evans (M-K-T), L. J. Joffray (I. C.), F. X. Nachtman (St. L.-S. F.), R. E. Rightmire (Consolidation Coal Co.), C. W. Sturdevant (Sou. Pac.), C. E. Trotter (N. Y. C. & St. L.), and F. R. Wadleigh (Consulting Engineer).

[Other reports presented at this meeting will be published in a subsequent issue of the *Railway Age*.—EDITOR.]

FURTHER HEARINGS in connection with the Interstate Commerce Commission's eastern freight rate investigation will be held at Washington beginning on May 17 before Chairman Eastman, for the purpose of receiving evidence from shippers with respect to a modified proposal submitted by the New England carriers at the recent hearing. Briefs in the case, it was announced, are due on November 1.

THE CHICAGO & EASTERN ILLINOIS, in conjunction with the Cincinnati, Indianapolis & Western, the Norfolk & Western and the Chesapeake & Ohio, has opened a new freight route between Chicago and points in West Virginia, Virginia, North Carolina, South Carolina, eastern Kentucky, southern Ohio, and the north Atlantic seaboard territory. Trains will be operated over the Chicago & Eastern Illinois to Hillsdale, Ill., thence by way of the Cincinnati, Indianapolis & Western to Cincinnati, Ohio, and by way of the Norfolk & Western or the Chesapeake & Ohio to points east of Cincinnati.

General News Department

The Interstate Commerce Commission which last week held hearings at Boston on the proposed increase in rates for transportation of milk on New England railroads, adjourned the hearing until some time in July.

The Interstate Commerce Commission has denied a petition filed by the Kansas City Southern for relief from compliance with its order of June 13, 1922, requiring the installation of automatic train control.

The annual meeting of the Western Railway Club will be held on May 21 at the Hotel Sherman, Chicago. The speakers at the dinner will be R. H. Aishton, president of the American Railway Association, and Robert C. Ross, chairman of the Mid-West Regional Advisory Board. The results of the election of officers for the ensuing year will be announced at that time.

The Water Service Committee of the American Railway Engineering Association has signified its intention to be represented at the annual convention of the Master Boiler Makers' Association which is to be held at the Hotel Statler, Buffalo, N. Y., May 25 to 28, where its membership has been invited to participate in the discussion of a report on Boiler Corrosion and Pitting, which will be presented on the third day of the convention.

James J. Moore, a helper on an electric locomotive of the Long Island Railroad who turned a switch under a passenger train at Long Island City, N. Y., on July 30, 1924, was sentenced in the Queens County Court on May 5, to 60 days' imprisonment in the workhouse. One passenger was killed in the derailment that resulted from the turning of the switch under the train. This derailment was discussed in the *Railway Age* of August 16, 1924, pages 281, 298 and 303. Moore, and also the signalman in the tower, who had unlocked the switch, were held in bail of \$25,000 each. The signalman is still awaiting trial.

Efficiency and Economy Investigation Discontinued

The Interstate Commerce Commission has announced the discontinuance of its proceeding of investigation as to the "efficiency and economy of management of common carriers," which was instituted on January 9, 1923, after the shop strike and the car shortage of 1922, with reference particularly to the maintenance of equipment and the adequacy of service.

New York State Grade Crossings

The appropriation bills for the elimination of highway grade crossings passed recently by the legislature of New York, were signed by the governor on May 6; for crossings within the limits of New York City, \$50,000,000 and for those in other parts of the state, \$20,000,000.

The Public Service Commission has already set dates for hearings in different cities on 48 crossing projects outside of New York City. Among those yet to be held (between May 15 and June 1) are those at Albany, May 19, 20 and 21; Ithaca, May 24; Syracuse, May 26; Little Falls, May 26; Elmira, May 25; Binghamton, May 26; Utica, May 27 and Oneonta, May 27.

Seek Rehearing on B. & M. Branch Abandonment

Inhabitants of Kennebunk and Kennebunkport, Me., have petitioned the Interstate Commerce Commission to re-open proceedings on the application of the Boston & Maine for authority to abandon its Kennebunkport branch, for the presentation of further evidence, on the ground that the hotel proprietors in the vicinity were unable to be present and testify at the hearing in December because "many of them have occupations and business interests which take them to Florida and other winter resorts during the winter, and that if

they had been present they would have testified to the great inconvenience and damage to them that the abandonment of this branch line would occasion."

Delaware & Hudson to Hold

Fourth Car Building Contest

On Tuesday, May 18, the car department of the Delaware & Hudson will hold its fourth car building contest at Green Island, New York. The contest will begin at 8 a. m. The problem on this occasion will be the rebuilding of the trucks, underframes and superstructure of a D. & H. 85,000-lb. capacity drop-bottom gondola. Three teams will compete, representing the car shops of the Pennsylvania, Susquehanna and Saratoga divisions where work of this character is the usual performance. The team declared the winner by the judges, on the basis of workmanship and time, will be awarded the Birkett memorial cup. The Green Island car shop is situated between Troy, N. Y., and Albany and can be reached by train or trolley from either of these cities.

Traffic Division A. R. A.

H. J. Forster, secretary of the American Railway Association announces that the general committee of the traffic division consists of the following members, the first-named being chairman: G. H. Ingalls (N. Y. C.), J. L. Eysmans (Penn.), Gerrit Fort (B. & M.), W. C. Maxwell (Wabash), R. M. Calkins (C. M. & St. P.), S. G. Lutz (C. & A.), J. B. Payne (Texas & Pac.), J. R. Koontz (St. L.-S. F.), Lincoln Green (Southern), R. A. Brand (A. C. L.), J. L. Edwards (A. B. & A.) and A. R. Smith (L. & N.). The secretary of the general committee is J. Gottschalk, 143 Liberty street, New York City.

The general committee has appointed three standing committees. These, with the names of their chairmen, are: On standard containers, packing and marking, R. C. Fyfe; on weighing and inspection, A. S. Dodge; on car service, demurrage and storage, J. L. Eysmans.

Freight Station Section at Detroit, June 15-18

The Freight Station Section of the American Railway Association, C. T. Spear (C., St. P., M. & O.) chairman, will hold its sixth annual meeting at Hotel Statler, Detroit, Mich., on Tuesday, Wednesday, Thursday and Friday, June 15, 16, 17 and 18. Among the topics to be discussed are the following:

Manual of instructions for freight station employees; Educational campaign for station employees; Educating by means of photography; Is the memorandum copy of the straight bill of lading a safe document?—also,

Standard forms of shipping orders, need of improvement in; Handling of part-lot shipments, l. c. l.; Failure to stamp waybills at junctions; Loss of revenue from making advances to shippers; How best to eliminate undercharges and overcharges; Fire hazards; Automobiles, motor buses and motor trucks, shipping instructions for; Serially numbering containers of articles shipped by freight; Cultivation of closer co-operation with water carriers.

Hudson Bay Railway Not a Part of C. N. R.

Some Conservative members of the Canadian Senate last week sought to get some information from the government, through its representative in the Senate, Raoul Dandurand, as to the expenditure of the \$3,000,000 asked for this year. Senator Dandurand said in part:

"From the end of steel to Nelson the road has been graded; so that construction on the 90 miles that need to be completed is already far advanced, inasmuch as the roadbed is ready. The rail has yet to be laid, and there are perhaps some small rivers to cross.

(Continued on page 1336)

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1926

Name of road	Average mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation	Operating income (or loss)	Net after rents, 1925	Net after rents, 1926
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Equipment	Traffic					
Akron, Canton & Youngstown.....	Mar. 171	\$264,765	\$321	\$277,052	\$48,655	\$32,148	\$11,228	67.9	\$91,251	\$71,768	\$40,028	\$46,933
Alabama & Vicksburg.....	3 mos. 171	734,138	1,174	735,312	141,467	85,258	34,339	69.9	232,372	176,443	79,711	113,477
Alabama & Vicksburg.....	Mar. 141	227,180	48,709	295,889	40,727	25,383	9,032	73.2	79,149	48,443	48,065	76,679
Alabama & Vicksburg.....	3 mos. 141	635,063	153,274	844,492	134,318	154,008	30,837	78.8	176,992	93,692	96,784	164,056
Vicksburg, Shreveport & Pacific.....	Mar. 188	291,984	50,652	367,829	55,966	88,335	13,041	85.5	53,129	29,234	13,576	63,565
Vicksburg, Shreveport & Pacific.....	3 mos. 188	844,121	157,846	1,073,029	176,422	208,476	40,475	82.6	186,318	111,867	64,695	83,128
Ann Arbor.....	Mar. 293	451,569	25,519	489,933	45,047	108,972	11,496	81.3	91,401	68,194	55,406	77,799
Ann Arbor.....	3 mos. 293	1,297,494	76,855	1,413,968	94,122	299,848	32,976	77.1	323,104	253,450	209,165	191,431
Atchison, Topeka & Santa Fe.....	Mar. 9,219	11,270,401	3,087,465	15,711,311	2,518,791	3,130,249	348,678	70.6	4,616,200	3,270,725	3,242,571	1,857,890
Atchison, Topeka & Santa Fe.....	3 mos. 9,219	30,666,329	9,884,227	43,563,752	7,797,038	9,232,057	1,062,670	71.8	12,406,550	8,360,792	7,440,052	7,440,052
Gulf, Colorado & Santa Fe.....	Mar. 1,908	1,874,099	206,802	2,283,200	483,358	488,541	50,323	83.0	377,953	285,354	139,327	177,266
Gulf, Colorado & Santa Fe.....	3 mos. 1,908	5,313,943	678,529	6,382,419	1,387,629	1,387,108	153,043	83.9	1,027,834	747,934	414,966	1,008,394
Panhandle & Santa Fe.....	Mar. 923	821,251	113,183	995,471	109,078	187,817	9,035	59.8	400,429	346,016	292,212	35,998
Panhandle & Santa Fe.....	3 mos. 923	2,302,807	355,104	2,831,436	235,484	337,372	29,061	57.5	1,201,951	1,027,179	881,320	53,716
Atlanta & West Point.....	Mar. 93	179,681	65,903	280,463	49,280	47,882	10,563	80.3	55,320	38,200	26,946	41,865
Atlanta & West Point.....	3 mos. 93	484,280	208,995	789,406	121,567	133,055	32,281	79.0	165,881	121,470	79,399	84,362
Western of Alabama.....	Mar. 133	253,236	62,093	343,042	34,657	59,993	11,132	64.4	122,119	101,468	95,821	78,544
Western of Alabama.....	3 mos. 133	607,163	198,324	880,600	96,966	167,266	34,271	70.4	260,764	215,488	190,590	183,011
Atlanta, Birmingham & Atlantic.....	Mar. 639	471,870	38,628	561,137	110,637	101,906	27,093	82.3	98,632	83,590	58,368	14,930
Atlanta, Birmingham & Atlantic.....	3 mos. 639	1,239,552	124,931	1,508,300	299,884	277,965	80,849	85.5	231,862	169,977	93,007	12,866
Atlantic Coast Line.....	Mar. 4,924	7,454,913	2,392,535	10,241,721	1,007,281	1,646,622	159,145	60.3	4,214,337	3,564,102	3,193,465	3,077,742
Atlantic Coast Line.....	3 mos. 4,924	18,860,447	7,668,513	28,860,168	2,882,290	4,505,029	473,339	62.8	10,701,242	8,998,573	7,806,536	7,242,980
Charleston & Western Carolina.....	Mar. 342	382,357	21,422	416,592	54,895	43,821	14,063	62.1	156,513	137,399	123,393	163,821
Charleston & Western Carolina.....	3 mos. 342	988,592	66,402	1,094,606	200,472	135,143	42,059	73.1	294,912	230,437	197,351	255,548
Baltimore & Ohio.....	Mar. 5,294	16,217,664	2,040,242	19,596,489	4,844,337	4,031,847	718,647	78.7	4,167,027	3,282,302	3,094,784	2,731,915
Baltimore & Ohio.....	3 mos. 5,294	47,130,698	6,211,632	56,789,281	6,901,136	13,438,800	1,173,927	79.6	11,606,702	8,935,562	8,176,915	6,540,474
Baltimore & Ohio Chicago Term.....	Mar. 80	.....	.....	305,101	39,547	40,558	16,888	89.1	13,341	9,146	11,887	73,065
Baltimore & Ohio Chicago Term.....	3 mos. 80	.....	.....	856,305	94,437	95,868	57,172	85.8	121,806	13,084	290,209	198,845
Staten Island Rapid Transit.....	Mar. 23	114,402	105,178	245,264	40,603	35,274	1,668	82.3	43,212	27,697	10,029	27,670
Staten Island Rapid Transit.....	3 mos. 23	312,432	306,758	684,692	117,065	90,521	5,704	84.4	106,476	59,072	45,739	108,347
Bangor & Arceotook.....	Mar. 615	743,598	87,552	856,053	131,766	143,311	5,144	57.2	366,445	297,381	318,309	246,561
Bangor & Arceotook.....	3 mos. 615	1,788,108	226,855	2,081,877	342,979	379,784	13,877	72.3	702,550	547,313	615,255	619,727
Belt Ry. Co. of Chicago.....	Mar. 32	.....	.....	1,222,281	44,487	64,108	3,178	72.3	172,550	124,402	161,626	126,137
Belt Ry. Co. of Chicago.....	3 mos. 32	699,855	16,001	715,856	178,000	28,875	2,875	70.9	315,153	372,035	486,389	384,703
Bessmer & Lake Erie.....	Mar. 228	.....	.....	1,754,772	176,629	325,558	14,469	98.7	9,407	13,075	49,472	268,029
Bessmer & Lake Erie.....	3 mos. 228	1,935,038	49,604	2,405,185	172,212	946,551	44,461	101.5	36,553	120,365	100,423	582,328
Bingham & Garfield.....	Mar. 33	47,729	.....	49,763	8,151	14,559	1,387	91.0	9,439	14,863	16,793	16,793
Bingham & Garfield.....	3 mos. 33	127,906	.....	132,237	22,841	31,966	3,279	96.7	32,478	738	47,267	45,728
Boston & Maine.....	Mar. 2,276	4,994,810	1,694,424	7,562,712	659,311	1,331,200	58,028	69.5	2,304,055	2,049,340	1,696,662	802,256
Boston & Maine.....	3 mos. 2,276	12,182,031	5,059,885	19,504,452	2,121,014	3,731,900	189,331	77.7	4,354,409	3,575,805	2,723,164	1,872,973
Brooklyn Eastern Dist. Term.....	Mar. 9	128,565	.....	136,332	10,432	16,120	48,226	59.2	55,638	46,599	48,839	47,381
Brooklyn Eastern Dist. Term.....	3 mos. 9	340,523	.....	363,325	22,983	36,281	720	58.9	149,250	127,785	132,265	126,797
Buffalo & Susquehanna R. Corp.....	Mar. 253	97,385	3,143	103,872	27,316	41,217	1,726	109.4	9,276	12,926	601	33,183
Buffalo & Susquehanna R. Corp.....	3 mos. 253	286,788	8,910	300,217	79,084	114,451	5,458	108.8	26,331	35,781	4,242	118,695
Buffalo, Rochester & Pittsburgh.....	Mar. 601	1,999,618	101,894	1,544,181	130,813	49,371	27,268	81.2	273,451	223,451	261,805	135,307
Buffalo, Rochester & Pittsburgh.....	3 mos. 601	5,820,485	316,182	4,882,495	374,430	1,274,555	85,022	80.6	831,178	681,178	827,040	507,417
Canadian Pacific Lines in Maine.....	Mar. 233	250,061	41,074	302,472	36,019	71,722	3,169	77.9	66,723	56,223	42,429	69,131
Canadian Pacific Lines in Maine.....	3 mos. 233	763,493	100,645	900,645	180,456	179,909	23,578	74.0	234,387	202,887	158,612	176,274
Central of Georgia.....	Mar. 1,917	2,156,667	526,446	2,949,663	412,627	470,821	75,462	72.3	816,436	677,521	555,747	551,093
Central of Georgia.....	3 mos. 1,917	5,571,670	1,711,280	8,008,927	1,168,655	1,139,387	217,207	75.3	1,975,891	1,603,825	1,364,234	1,170,766
Central of New Jersey.....	Mar. 690	4,025,079	644,039	5,022,787	380,764	424,594	42,594	71.2	1,445,399	1,092,108	980,206	596,777
Central of New Jersey.....	3 mos. 690	9,238,585	2,010,164	12,121,532	1,130,422	2,959,386	113,612	82.6	2,103,340	1,050,473	676,058	1,618,023
Central Vermont.....	Mar. 433	550,228	108,300	723,969	90,032	133,435	14,558	84.9	109,340	89,723	73,091	51,561
Central Vermont.....	3 mos. 433	1,446,863	333,200	1,565,332	212,291	350,545	42,685	84.7	243,533	202,317	202,317	31,456
Chesapeake & Ohio.....	Mar. 2,637	9,318,000	709,318	10,027,318	1,521,825	2,830,541	123,241	73.8	2,734,761	2,175,475	2,440,812	1,743,882
Chesapeake & Ohio.....	3 mos. 2,637	26,931,631	2,125,451	30,276,213	4,195,768	7,939,069	341,276	73.8	7,921,719	6,243,881	6,833,154	5,431,413
Chicago & Alton.....	Mar. 1,055	1,738,207	485,453	2,449,465	294,152	394,455	65,973	79.6	499,708	391,662	222,591	259,630
Chicago & Alton.....	3 mos. 1,055	5,053,677	1,509,395	7,196,366	710,366	1,068,207	207,368	80.0	1,446,154	1,116,117	598,647	819,769
Chicago & Eastern Illinois.....	Mar. 945	1,820,322	347,337	2,354,417	235,417	702,566	77,994	82.1	408,413	302,834	182,182	532
Chicago & Eastern Illinois.....	3 mos. 945	5,273,342	1,010,601	6,881,587	551,708	2,070,597	231,142	84.7	1,095,352	773,556	427,186	260,937
Chicago & North Western.....	Mar. 8,457	8,521,674	2,101,694	11,956,641	1,600,372	2,783,065	171,091	82.0	2,158,337	1,554,589	1,232,041	1,093,942
Chicago & North Western.....	3 mos. 8,457	23,660,535	6,298,968	33,767,362	3,809,847	7,793,197	497,168	81.0	6,413,988	4,001,718	3,623,880	1,993,942
Chicago, Burlington & Quincy.....	Mar. 9,404	10,082,523	1,731,603	13,015,297	1,309,164	2,699,332	220,473	70.9	3,787,582	2,259,659	2,529,278	1,866,346
Chicago, Burlington & Quincy.....	3 mos. 9,404	28,364,022	5,589,435	37,390,813	3,311,256	8,375,439	668,656	72.7	10,197,967	7,249,996	6,634,701	5,031,593
Chicago Great Western.....	Mar. 1,496	1,542,152	264,635	1,959,876	186,828	408,604	72,377	79.5	402,720	322,950	206,206	112,157
Chicago Great Western.....	3 mos. 1,496	4,384,195	830,887	5,648,532	533,113	1,187,409	212,246	80.7	1,080,966	830,522	458,566	404,456
Chicago, Indianapolis & Louisville.....	Mar. 647	1,204,768	194,192	1,545,642	130,749	339,238	37,242	77.0	432,307	340,843	250,208	226,688
Chicago, Indianapolis & Louisville.....	3 mos. 647	3,388,544	580,836	4,381,602	365,683	968,112	104,875	73.9	1,143,478	910,535	600,545	524,295

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1926--CONTINUED

Name of road	Average mileage operated during period.	Operating revenues			Operating expenses			Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents, 1925.
		Freight.	Passenger.	Total (inc. misc.)	Maintenance of way and structures.	Traffic.	Transportation.					
Chicago, Milwaukee & St. Paul.... Mar. 11, 205	10,098,902	\$1,524,280	\$12,905,635	\$1,475,659	\$3,376,372	\$232,815	\$4,969,512	\$346,674	\$10,402,054	\$2,503,581	\$1,751,528	\$1,474,323
Chicago, Milwaukee & St. Paul.... Mar. 11, 205	28,328,404	4,631,603	36,658,999	3,907,451	9,703,745	686,638	14,714,390	1,013,434	30,171,867	6,486,232	4,224,127	3,227,021
Chicago, Peoria & St. Louis..... Mar. 215	173,349	28,029	219,120	35,298	41,688	2,865	110,894	22,123	212,868	6,252	4,205	16,446
Chicago River & Indiana..... Mar. 19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chicago, Rock Island & Pacific..... Mar. 7,563	7,605,896	1,788,476	10,259,076	1,304,678	2,428,784	236,779	4,089,608	890,158	8,346,784	1,912,892	1,317,471	826,003
Chicago, Rock Island & Pacific..... Mar. 7,563	21,953,266	5,473,156	29,402,266	3,671,441	6,958,841	699,841	11,023,618	1,601,500	23,801,166	5,241,760	3,466,434	2,961,761
Chicago, Rock Island & Gulf..... Mar. 458	367,950	69,610	482,351	65,570	78,110	19,476	205,878	16,400	386,976	95,375	77,251	81,790
Chicago, Rock Island & Gulf..... Mar. 458	1,118,428	232,306	1,469,784	185,465	215,297	56,754	632,111	48,738	1,157,122	312,662	258,289	312,089
Chicago, Rock Island & Omaha..... Mar. 1,841	1,617,173	432,326	2,214,867	235,008	427,003	35,813	975,352	77,518	1,781,345	435,522	316,089	204,191
Chicago, Rock Island & Omaha..... Mar. 1,841	4,611,502	1,242,239	6,312,793	742,342	1,266,451	106,168	2,896,921	226,612	5,272,248	1,040,545	685,835	853,612
Chicago, Rock Island & Western..... Mar. 347	356,898	24,093	105,683	38,064	92,142	15,903	161,856	15,168	324,031	81,652	62,278	15,268
Chicago, Rock Island & Western..... Mar. 347	1,018,913	71,969	1,162,751	102,594	260,059	47,842	485,663	50,836	949,821	212,944	138,560	59,383
Chicago, Rock Island & Western..... Mar. 309	685,963	26,570	729,258	56,012	213,823	32,751	137,820	17,836	448,987	280,271	220,273	324,444
Chicago, Rock Island & Western..... Mar. 309	1,950,849	81,020	2,075,166	181,071	595,970	68,351	428,165	57,769	1,329,135	746,031	566,035	902,384
Colorado & Southern..... Mar. 1,056	928,813	94,817	926,688	127,135	235,733	12,816	367,957	44,729	793,650	133,038	69,357	19,443
Colorado & Southern..... Mar. 1,056	2,318,458	320,786	2,959,236	325,619	708,183	39,809	1,135,247	128,050	2,354,505	440,725	349,451	281,540
Colorado & Southern..... Mar. 1,056	1,417,430	165,956	935,414	168,838	362,947	14,032	342,798	39,543	650,025	285,389	227,069	310,066
Ft. Worth & Denver City..... Mar. 491	2,125,713	501,787	2,805,022	220,805	522,754	44,717	934,391	116,313	1,859,314	945,708	765,608	842,766
Wichita Valley..... Mar. 271	95,018	17,194	126,270	21,299	7,620	.....	46,325	1,653	75,315	44,955	35,416	14,916
Wichita Valley..... Mar. 271	327,792	54,128	405,086	53,138	27,521	.....	136,561	5,481	217,434	187,652	159,051	96,433
Wichita Valley..... Mar. 271	132,652	21,635	167,479	43,223	18,124	3,648	67,573	5,989	136,432	82,7	27,821	8,522
Wichita Valley..... Mar. 271	76,257	76,257	179,779	127,177	33,663	.....	179,113	32,331	403,056	761,23	171,860	22,828
Delaware & Hudson..... Mar. 881	378,647	267,158	4,249,714	432,994	943,973	47,795	1,423,685	136,700	3,000,601	1,249,113	1,161,075	1,065,109
Delaware & Hudson..... Mar. 881	7,488,934	830,025	8,857,305	2,522,482	14,471,28	120,7	3,668,631	423,920	8,049,474	807,831	542,758	387,243
Delaware & Hudson..... Mar. 881	1,375,599	137,599	1,375,599	137,599	1,375,599	120,717	2,951,450	177,910	5,226,550	2,382,338	1,715,147	1,704,104
Delaware & Hudson..... Mar. 881	4,249,714	424,973	4,249,714	424,973	4,249,714	120,717	8,049,474	423,920	14,471,28	3,668,631	2,951,450	2,951,450
Denver & Rio Grande Western..... Mar. 2,548	1,957,427	303,410	2,443,889	497,316	567,322	767,196	1,671,96	87,450	1,869,194	575,695	390,475	424,131
Denver & Rio Grande Western..... Mar. 2,548	5,991,197	920,633	7,412,830	1,225,419	1,448,388	158,677	2,322,765	238,363	5,501,782	1,911,048	1,355,604	992,931
Denver & Rio Grande Western..... Mar. 2,548	1,957,427	303,410	2,443,889	497,316	567,322	767,196	1,671,96	87,450	1,869,194	575,695	390,475	424,131
Denver & Salt Lake..... Mar. 255	727,320	71,688	865,640	195,915	297,619	4,821	234,279	20,370	753,504	112,136	94,130	81,407
Detroit & Mackinac..... Mar. 375	80,881	24,135	117,188	18,722	44,046	1,847	52,512	5,273	122,388	104,4	55,355	5,682
Detroit & Mackinac..... Mar. 375	230,868	69,215	343,832	55,795	118,545	5,547	147,988	15,911	343,442	179,998	7,680	17,998
Detroit & Mackinac..... Mar. 375	432,103	.....	432,103	432,103	432,103	432,103	432,103	432,103	432,103	432,103	432,103	432,103
Detroit & Toledo Shore Line..... Mar. 50	1,325,022	1,325,022	1,325,022	1,325,022	1,325,022
Detroit Terminal..... Mar. 26
Detroit Terminal..... Mar. 26
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REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1926—CONTINUED

Name of road	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents.
		Freight.	Passenger.	Total (inc. misc.).	Way and structures.	Maintenance of equip-ment.	Traffic.	Trans- portation.				
Grand Trunk Western.....Mar.	347	\$1,461,020	\$151,672	\$1,612,692	\$113,474	\$400,849	\$5,451	\$605,011	\$1,221,783	\$408,971	\$52,722	\$97,147
Atlantic & St. Lawrence.....Mar.	166	3,913,987	459,311	4,373,298	2,015,613	1,150,323	106,749	1,700,697	3,572,591	953,879	648,756	62,700
Chic., Det. & Canada Gr. Tr. Jet.....Mar.	166	172,765	33,495	206,260	29,035	37,135	5,028	132,195	7,537	8,084	-71,283	-91,502
Det., Grand Haven & Milwaukee.....Mar.	189	557,590	92,016	649,606	76,782	106,907	15,100	384,678	24,712	35,688	-166,611	-243,536
Great Northern.....Mar.	8,221	6,084,657	978,969	7,063,626	2,787,607	1,697,416	3,926	1,917,332	6,085,145	184,535	154,012	115,732
Green Bay & Western.....Mar.	234	140,026	2,976,192	3,116,218	2,216,230	4,447,837	11,982	318,635	12,881	481,794	380,065	359,955
Gulf & Ship Island.....Mar.	307	267,843	48,998	316,841	138,510	70,280	5,674	142,178	7,386	166,626	118,794	115,879
Gulf, Mobile & Northern.....Mar.	466	1,380,127	29,995	1,410,122	402,570	198,994	15,563	426,197	22,163	1,075,220	100,142	177,262
Hocking Valley.....Mar.	348	3,841,054	193,719	4,034,773	92,090	91,680	23,947	145,944	25,755	163,853	123,089	115,846
Illinois Central.....Mar.	4,874	9,974,403	1,973,185	11,947,588	2,947,789	2,466,799	71,150	4,583,078	67,292	1,083,589	357,211	288,574
Yazoo & Mississippi Valley.....Mar.	1,379	1,599,605	254,246	1,853,851	414,975	414,975	14,874	453,078	47,200	1,083,589	357,211	288,574
Illinois Central Combined.....Mar.	6,254	4,750,677	845,100	5,595,777	1,681,276	3,012,958	235,179	4,658,731	343,365	9,983,471	2,030,133	2,104,395
Kansas City, Mexico & Orient.....Mar.	272	127,332	5,839	133,171	33,877	369,646	32,908	748,049	54,152	1,360,982	271,506	371,693
Kan. City, Mex. & Orient of Tex.....Mar.	465	230,535	17,867	248,402	98,708	123,174	19,288	166,626	21,202	428,257	45,646	119,680
Kansas City Southern.....Mar.	784	3,396,140	348,839	3,744,979	736,754	736,754	49,066	1,467,918	83,106	3,061,882	1,179,165	1,063,326
Texasarkana & Ft. Smith.....Mar.	81	627,694	31,553	659,247	58,259	58,259	17,671	203,417	28,907	1,167,008	122,940	91,720
Kansas, Oklahoma & Gulf.....Mar.	314	197,848	4,869	202,717	25,384	82,201	10,879	71,897	8,185	194,468	5,354	7,035
Lake Superior & Ishpeming.....Mar.	160	60,779	5,951	66,730	30,258	27,580	467	37,993	5,038	101,329	33,674	69,471
Lake Terminal.....Mar.	13	292,371	1,996	294,367	84,490	80,591	1,592	117,742	14,934	292,342	42,352	47,885
Lehigh & Hudson River.....Mar.	96	625,102	7,561	632,663	155,703	155,703	5,946	305,362	48,271	505,010	6,291	7,028
Lehigh & New England.....Mar.	219	450,555	1,513	452,068	36,612	101,310	4,499	138,361	17,608	298,390	167,719	73,092
Ichigh Valley.....Mar.	1,363	6,117,538	550,980	6,668,518	1,904,794	3,798,101	362,416	2,722,828	137,291	5,216,518	1,366,159	1,304,489
Louisiana & Arkansas.....Mar.	302	330,146	18,923	349,069	44,060	61,901	11,781	97,575	13,026	272,835	96,209	78,419
Louisiana Ry. & Nav. Co.....Mar.	302	956,431	58,582	1,015,013	149,705	173,078	34,858	297,613	34,490	688,750	245,094	196,993
Louisiana Ry. & Nav. Co. of Tex.....Mar.	206	99,178	5,345	104,523	18,527	17,884	3,310	50,617	6,297	101,178	5,443	13,362
Louisville & Nashville.....Mar.	5,038	10,314,684	1,778,535	12,093,219	2,934,582	2,934,582	10,972	1,678,816	18,667	3,067,710	38,877	16,329
Louisville, Henderson & St. Louis.....Mar.	199	272,512	47,179	319,691	64,857	36,410	7,399	104,530	11,062	224,258	87,757	80,899
Maine Central.....Mar.	1,121	1,492,558	348,435	1,840,993	1,007,903	1,007,903	12,762	792,743	51,171	1,492,285	260,798	244,130
Midland Valley.....Mar.	364	303,858	29,616	333,474	76,892	1,007,903	37,356	2,184,661	148,259	41,857	353,940	385,479
Minneapolis & St. Louis.....Mar.	1,627	2,980,662	317,110	3,297,772	1,368,106	1,368,106	110,276	1,532,482	42,992	1,100,419	32,978	759,562
Minneapolis, St. Paul & S. S. Marie.....Mar.	4,400	2,667,713	471,816	3,139,529	446,652	770,316	73,863	1,525,332	126,106	2,965,708	305,301	328,468
Duluth, South Shore & Atlantic.....Mar.	590	942,194	114,204	1,056,398	151,183	240,605	21,005	371,163	35,166	1,021,232	151,134	104,412
Spokane International.....Mar.	165	87,184	10,458	97,642	14,902	6,190	3,261	31,562	6,038	62,981	36,098	18,648
Mississippi Central.....Mar.	161	120,626	8,757	129,383	19,014	22,724	7,362	96,232	18,705	107,537	85,429	69,173
Mississippi Central.....Mar.	161	353,266	29,914	383,180	50,335	77,363	22,151	106,934	22,231	279,014	36,708	33,982
Mississippi Central.....Mar.	161	353,266	29,914	383,180	50,335	77,363	22,151	106,934	22,231	279,014	36,708	33,982

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1926—CONTINUED

Name of road	Average mileage operated during period	Operating revenues			Operating expenses			General	Total	Operating ratio	Net from railway operation	Operating income (or loss)	Net after rents	Net after rents, 1925.
		Freight	Passenger	Total	Way and structures	Maintenance of equip.	Traffic	Trans- portation						
Missouri & North Arkansas.....Mar.	364	\$133,031	\$14,634	\$147,665	\$48,959	\$29,987	\$8,177	\$57,691	\$6,680	\$151,494	\$1,882	\$1,882	\$4,710	\$4,710
Missouri-Kansas-Texas.....3 mos.	364	338,476	46,374	384,850	136,557	70,751	22,558	163,718	21,224	414,808	1,137	1,137	9,371	9,371
Missouri-Kansas-Texas.....Mar.	1,799	2,219,651	328,808	2,548,459	2,572,800	650,841	57,700	90,689	1,815,690	2,464,352	721,821	721,821	769,399	769,399
Missouri-Kansas-Texas.....3 mos.	1,799	6,338,706	1,105,990	7,444,696	2,572,800	650,841	172,361	2,330,414	5,358,184	2,330,414	2,330,414	2,330,414	2,330,414	2,330,414
Missouri-Kansas-Texas of Tex.....Mar.	1,389	1,168,847	306,006	1,474,853	233,393	222,640	41,248	659,835	66,072	1,235,656	333,722	333,722	622,474	622,474
Missouri-Kansas-Texas of Tex.....3 mos.	1,389	3,510,531	961,252	4,471,783	636,826	646,356	129,267	2,070,638	188,445	3,705,298	1,047,333	1,047,333	2,657,965	2,657,965
Missouri Pacific.....Mar.	7,347	8,932,357	1,234,847	10,167,204	2,297,200	2,297,200	79,761	4,000,156	346,203	8,572,825	2,024,352	2,024,352	1,364,909	1,364,909
Missouri Pacific.....3 mos.	7,347	25,549,428	3,915,084	29,464,512	4,481,462	6,756,314	787,431	11,765,052	973,912	24,788,890	5,750,500	5,750,500	4,550,202	4,550,202
Gulf Coast Lines.....Mar.	922	1,115,303	178,950	1,294,253	209,796	212,805	38,565	410,096	54,662	801,824	491,431	491,431	315,990	315,990
Gulf Coast Lines.....3 mos.	922	2,877,391	553,838	3,431,229	665,724	627,614	118,481	1,081,488	160,119	2,601,074	1,039,623	1,039,623	667,359	667,359
International-Great Northern.....Mar.	1,159	1,096,778	194,041	1,290,819	247,617	239,282	34,289	595,671	52,749	1,164,112	254,897	254,897	136,771	136,771
International-Great Northern.....3 mos.	1,159	3,148,754	573,992	3,722,746	718,780	718,780	98,384	1,759,325	175,478	3,450,906	667,345	667,345	291,910	291,910
Texas & Pacific.....Mar.	1,953	2,172,291	479,780	2,652,071	479,894	568,083	68,082	1,070,296	104,282	2,288,466	431,313	431,313	347,303	347,303
Texas & Pacific.....3 mos.	1,953	6,479,594	1,438,624	7,918,218	1,342,131	1,634,045	200,961	3,209,576	296,973	6,669,223	1,137,323	1,137,323	1,184,925	1,184,925
Mobile & Ohio.....Mar.	1,161	1,539,964	104,200	1,644,164	229,945	311,960	53,041	578,833	45,267	1,218,982	518,362	518,362	369,101	369,101
Mobile & Ohio.....3 mos.	1,161	4,296,084	346,819	4,642,903	656,201	918,504	147,237	1,686,967	135,443	3,543,023	1,079,188	1,079,188	908,770	908,770
Memphis & Ohio.....Mar.	130	484,249	24,961	509,210	62,500	65,000	1,042	148,907	10,087	284,687	232,700	232,700	100,944	100,944
Memphis & Ohio.....3 mos.	130	1,688,851	73,022	1,761,873	187,500	195,500	3,089	537,714	30,815	950,598	838,933	838,933	338,653	338,653
Monongahela Connecting.....Mar.	7	.....	.....	.....	19,566	35,488	374	89,887	3,373	145,688	47,191	47,191	37,801	37,801
Monongahela Connecting.....3 mos.	7	.....	.....	.....	57,924	111,047	1,124	294,628	9,589	474,312	145,443	145,443	118,628	118,628
Montour.....Mar.	57	56,176	315	56,491	17,372	40,078	1,352	15,958	6,728	81,488	24,338	24,338	6,872	6,872
Montour.....3 mos.	57	156,085	893	156,978	43,994	107,309	4,122	46,181	20,659	222,265	69,404	69,404	19,617	19,617
Nashville, Chatt. & St. Louis.....Mar.	1,259	1,696,562	370,812	2,067,374	363,683	414,041	82,141	575,294	81,448	1,715,947	503,360	503,360	328,365	328,365
Nashville, Chatt. & St. Louis.....3 mos.	1,259	4,478,767	1,188,930	5,667,697	908,826	1,191,426	249,581	2,205,780	223,203	4,798,967	1,293,614	1,293,614	1,060,680	1,060,680
Nevada Northern.....Mar.	165	56,895	8,120	65,015	14,201	7,028	817	14,554	4,898	41,689	30,254	30,254	20,679	20,679
Nevada Northern.....3 mos.	165	183,835	24,494	208,329	42,374	19,752	2,556	45,445	14,682	125,539	102,987	102,987	73,326	73,326
Newburgh & South Shore.....Mar.	7	.....	.....	.....	13,644	43,364	.....	76,748	4,161	137,917	77,4	77,4	41,823	41,823
Newburgh & South Shore.....3 mos.	7	.....	.....	.....	29,147	127,338	.....	226,556	12,140	395,181	99,188	99,188	75,882	75,882
New Orleans Great Northern.....Mar.	274	217,783	23,265	241,048	28,721	51,566	6,509	77,586	11,577	176,162	71,1	71,1	39,074	39,074
New Orleans Great Northern.....3 mos.	274	680,430	71,167	751,597	85,829	148,674	20,442	223,196	33,962	513,032	259,150	259,150	153,867	153,867
New York Central.....Mar.	6,930	21,996,010	7,288,507	29,284,517	3,842,768	8,003,351	402,502	11,779,441	1,262,538	25,750,446	7,645,510	7,645,510	5,435,127	5,435,127
New York Central.....3 mos.	6,930	59,073,101	22,513,862	81,586,963	10,922,199	21,799,331	1,174,484	33,690,740	3,591,534	72,508,315	20,361,373	20,361,373	13,838,438	13,838,438
Cincinnati Northern.....Mar.	244	387,938	5,710	393,648	40,529	73,231	6,042	133,481	8,958	260,641	140,042	140,042	88,944	88,944
Cincinnati Northern.....3 mos.	244	1,138,042	20,435	1,158,477	116,544	198,072	17,137	402,055	31,870	761,383	413,417	413,417	241,815	241,815
Cleveland, Cin. & St. Louis.....Mar.	2,391	5,924,399	1,213,174	7,137,573	773,355	1,687,557	145,510	2,885,264	304,046	5,872,351	1,435,570	1,435,570	1,441,048	1,441,048
Cleveland, Cin. & St. Louis.....3 mos.	2,391	16,646,928	3,735,938	20,382,866	2,145,008	4,850,094	383,320	8,533,460	855,201	16,995,505	5,143,716	5,143,716	3,736,040	3,736,040
Indiana Harbor Belt.....Mar.	116	.....	.....	.....	80,505	114,658	4,199	469,325	30,791	699,918	258,054	258,054	180,307	180,307
Indiana Harbor Belt.....3 mos.	116	.....	.....	.....	274,849	335,130	15,166	1,318,559	93,486	2,036,365	761,383	761,383	370,629	370,629
Michigan Central.....Mar.	1,871	6,202,148	1,462,323	7,664,471	757,668	1,610,208	346,183	2,754,847	390,435	5,711,734	2,245,510	2,245,510	1,728,447	1,728,447
Michigan Central.....3 mos.	1,871	15,797,356	4,778,677	20,576,033	2,048,762	4,500,815	346,183	7,610,735	904,897	15,630,030	7,143,942	7,143,942	5,411,115	5,411,115
Pittsburgh & Lake Erie.....Mar.	231	2,538,574	233,695	2,772,269	367,441	938,369	25,880	904,263	76,600	2,315,338	360,862	360,862	770,216	770,216
Pittsburgh & Lake Erie.....3 mos.	231	7,353,597	715,064	8,068,661	1,044,130	2,537,999	76,927	2,729,661	232,155	6,684,264	1,092,989	1,092,989	2,507,489	2,507,489
New York, Chicago & St. Louis.....Mar.	1,691	4,527,839	127,321	4,655,160	512,111	901,464	122,253	1,628,986	160,070	3,328,910	1,492,562	1,492,562	1,084,254	1,084,254
New York, Chicago & St. Louis.....3 mos.	1,691	12,612,219	371,717	12,983,936	1,507,273	2,595,648	364,921	4,780,262	479,725	9,680,034	2,983,169	2,983,169	2,582,351	2,582,351
N. Y., New Haven & Hartford.....Mar.	1,918	6,368,823	3,828,363	10,197,186	1,215,393	2,330,709	72,236	4,119,897	301,047	8,208,687	3,334,465	3,334,465	1,792,566	1,792,566
N. Y., New Haven & Hartford.....3 mos.	1,918	15,637,622	11,792,167	27,429,789	3,620,718	6,691,658	218,143	11,790,516	886,300	23,716,346	7,346,719	7,346,719	4,621,596	4,621,596
Central New England.....Mar.	279	747,233	3,971	751,204	107,237	108,915	6,922	225,031	16,788	464,893	279,191	279,191	234,658	234,658
Central New England.....3 mos.	279	1,562,044	13,494	1,575,538	273,864	269,353	19,757	593,244	49,331	1,205,569	426,716	426,716	345,769	345,769
New York Connecting.....Mar.	20	221,559	.....	221,559	37,221	14,485	.....	51,465	1,423	104,594	152,703	152,703	104,356	104,356
New York Connecting.....3 mos.	20	596,618	.....	596,618	68,821	34,751	.....	154,072	4,759	262,403	418,640	418,640	282,219	282,219
New York, Ontario & Western.....Mar.	569	873,272	89,668	962,940	97,443	238,777	16,024	492,826	40,403	885,744	238,731	238,731	131,873	131,873
New York, Ontario & Western.....3 mos.	569	1,423,998	264,637	1,688,635	267,272	541,387	47,609	1,185,266	105,709	2,148,583	100,6	100,6	274,923	274,923
Norfolk & Western.....Mar.	2,241	8,551,685	586,227	9,137,912	1,209,533	1,849,197	106,566	2,449,086	166,640	5,822,770	3,667,799	3,667,799	2,916,624	2,916,624
Norfolk & Western.....3 mos.	2,241	24,037,748	1,788,914	25,826,662	3,571,091	5,253,129	322,660	7,368,809	478,131	17,011,288	9,740,826	9,740,826	7,485,566	7,485,566
Norfolk Southern.....Mar.	931	817,780	60,661	878,441	105,517	130,108	22,499	329,012	28,681	604,527	658,600	658,600	218,081	218,081
Norfolk Southern.....3 mos.	931	1,983,792	197,584	2,181,376	296,208	340,919	67,802	887,542	82,616	1,699,723	1,507,745	1,507,745	405,237	405,237
Northern Pacific.....Mar.	6,682	5,972,044	929,114	6,901,158	1,092,249	1,562,616	212,198	2,720,365	287,747	5,959,865	1,170,170	1,170,170	1,340,923	1,340,923
Northern Pacific.....3 mos.	6,682	16,276,157	2,742,534	19,018,691	2,805,526	4,372,922	585,452	7,928,747	754,021	16,673,324	2,118,125	2,118,125	2,599,640	2,599,640
Northwestern Pacific.....Mar.	493	302,754	151,697	454,451	102,901	86,816	5,371	121,107	18,468	424,590	76,466	76,466	27,935	27,935
Northwestern Pacific.....3 mos.	493	818,380	412,430	1,230,810	286,993	338,194	16,133	616,777	53,635	1,205,217	150,745	150,745	9,546	9,546

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1926—CONTINUED

Name of road	Average mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation	Operating income (or loss)	Net after rents	Net after rents 1925
		Freight	Passenger	Total	Way and structures	Traffic	Trans- portation					
Pennsylvania R. R.	10,500	\$42,111,968	\$10,992,180	\$53,104,148	\$7,481,892	\$14,431,982	\$710,329	\$22,079,348	\$1,594,435	\$47,023,618	\$7,366,881	\$4,969,600
Baltimore, Chesapeake & Atlantic	3 mos.	10,500	116,155,500	33,870,044	104,203,411	22,148,897	40,782,135	2,054,307	64,864,604	4,666,431	16,732,524	15,095,494
Baltimore, Chesapeake & Atlantic	3 mos.	130	69,672	21,280	90,952	2,754	29,430	1,401	56,040	4,129	113,740	103,382
Baltimore, Chesapeake & Atlantic	3 mos.	130	169,119	52,710	221,829	18,937	77,947	4,358	212,734	10,268	324,441	302,688
Long Island	397	1,019,004	1,663,212	2,682,216	470,486	553,550	25,844	1,394,582	69,096	2,524,630	330,898	244,753
West Jersey & Seashore	3 mos.	377	2,377,112	4,938,909	7,004,422	1,390,485	1,539,323	74,377	3,880,687	233,679	7,004,422	6,066,753
West Jersey & Seashore	3 mos.	378	447,523	468,757	909,590	197,413	134,760	15,409	465,270	25,987	859,502	59,983
West Jersey & Seashore	3 mos.	378	1,080,971	1,309,302	2,553,262	580,888	448,464	40,370	1,336,867	74,139	2,481,671	38,638
Pere Marquette	19	24,919	2,916	154,993	12,376	14,382	1,084	67,045	8,127	103,014	34,979	55,178
Pere Marquette	3 mos.	19	68,486	8,742	48,794	31,898	40,495	2,625	200,866	25,078	107,832	173,766
Pere Marquette	3 mos.	2,243	3,309,033	304,578	3,836,664	242,230	780,646	54,840	1,319,296	100,381	1,121,994	986,738
Pittsburgh & Shawmut	2,256	8,712,839	912,701	10,281,493	685,228	2,258,131	161,502	3,814,067	299,291	7,253,287	2,428,065	1,600,785
Pittsburgh & Shawmut	102	133,532	5,896	141,792	19,239	45,312	1,532	38,410	6,655	111,148	30,479	41,883
Pittsburgh & Shawmut	3 mos.	102	373,723	15,637	395,281	46,240	125,485	4,140	114,230	20,321	310,416	84,458
Pittsburgh & Shawmut	3 mos.	92	412,315	6,674	453,613	24,448	91,651	8,268	86,568	16,590	239,615	121,840
Pittsburgh & Shawmut	3 mos.	92	1,143,835	18,720	1,266,363	77,829	259,260	24,156	254,014	53,395	705,718	436,130
Pittsburgh, Shawmut & Northern	210	153,847	3,345	161,068	20,729	42,084	1,629	60,016	5,441	129,899	27,964	18,892
Pittsburgh, Shawmut & Northern	3 mos.	210	418,753	9,755	438,661	62,682	111,051	5,527	169,597	17,269	366,130	84,458
Quincy, Omaha & Kansas City	250	47,641	17,497	22,156	27,214	22,774	762	37,657	2,513	60,813	63,400	47,314
Quincy, Omaha & Kansas City	3 mos.	250	134,473	57,361	72,116	54,028	52,622	2,724	109,973	7,602	226,448	18,892
Reading Company	1,138	8,010,279	769,747	9,189,930	1,064,423	1,910,173	66,306	3,152,657	181,827	6,374,252	2,222,354	2,419,683
Atlantic City	3 mos.	1,137	19,174,182	2,366,416	22,560,213	2,775,420	8,777,926	198,024	17,439,940	3,779,754	4,418,944	4,551,992
Atlantic City	3 mos.	161	161,306	133,894	318,579	160,666	35,880	1,044,783	13,528	31,896	38,637	48,995
Atlantic City	3 mos.	161	377,023	369,590	747,490	289,051	94,331	528,787	15,586	943,247	221,855	302,821
Perkiomen	41	83,812	4,371	91,722	8,875	5,918	111	49,400	950	65,296	19,574	16,918
Port Reading	3 mos.	41	291,230	14,234	315,314	21,635	17,552	324	94,926	2,858	177,433	99,088
Port Reading	3 mos.	19	210,235	.....	262,194	14,660	12,165	229	90,376	4,709	123,527	39,794
Port Reading	3 mos.	19	562,453	.....	711,778	49,040	27,544	687	267,651	8,792	353,711	102,682
Richmond, Fred'sburg & Potomac	117	521,831	466,564	1,223,290	85,908	178,081	9,828	396,228	34,553	745,840	191,703	320,704
Rutland	3 mos.	117	1,369,016	3,404,578	233,481	513,509	25,090	1,105,531	105,394	2,106,388	1,052,683	898,956
Rutland	3 mos.	413	376,984	112,551	91,383	118,830	240,272	9,886	602,800	13,154	475,208	94,809
Rutland	3 mos.	413	933,371	317,042	1,571,705	261,848	337,381	28,823	673,264	39,910	1,345,938	185,916
St. Louis-San Francisco	4,986	5,597,133	1,163,968	7,257,526	829,234	1,500,497	111,457	2,506,610	249,779	5,181,729	1,727,330	1,663,474
St. Louis-San Francisco	3 mos.	4,986	16,091,467	3,753,741	22,882,247	2,395,623	4,056,960	316,777	7,444,756	730,057	5,259,531	5,119,546
St. Louis-San Francisco	3 mos.	233	74,118	15,283	99,415	19,980	50,089	5,741	102,943	10,355	14,683	4,121
St. Louis-San Francisco	3 mos.	233	243,117	47,252	320,011	65,048	59,585	10,023	154,356	15,154	303,787	21,050
St. Louis, San-Francisco & Tex.	137	130,268	11,128	147,836	20,898	24,568	4,832	55,524	6,590	112,408	31,594	3,963
St. Louis, San-Francisco & Tex.	3 mos.	137	407,414	35,936	463,320	58,801	71,881	17,433	20,134	337,321	116,116	40,873
St. Louis, San-Francisco & Tex.	3 mos.	940	1,351,674	108,258	1,543,441	193,911	282,402	57,184	385,402	60,689	475,074	311,057
St. Louis, San-Francisco & Tex.	3 mos.	940	4,002,963	358,620	4,608,986	729,934	809,192	173,046	1,173,761	177,702	1,275,801	1,009,569
St. Louis, San-Francisco & Tex.	3 mos.	807	467,226	55,590	573,263	189,962	138,012	24,367	250,655	33,159	639,481	43,872
St. Louis, San-Francisco & Tex.	3 mos.	807	1,475,512	170,873	1,997,203	319,697	388,833	73,819	749,468	97,567	1,836,181	1,303,5
St. Louis, San-Francisco & Tex.	3 mos.	318	117,678	21,169	150,823	34,903	16,370	3,381	48,349	6,166	108,469	39,492
St. Louis, San-Francisco & Tex.	3 mos.	318	355,948	60,616	450,274	88,993	48,821	10,650	318,539	20,751	121,625	43,653
Seaboard Air Line	3,928	4,936,427	1,258,611	6,856,734	855,766	912,305	191,678	2,479,863	187,813	4,755,137	1,810,581	1,274,484
Seaboard Air Line	3 mos.	3,928	12,789,705	4,333,369	18,844,445	2,445,293	2,725,595	605,926	7,035,311	564,712	4,217,882	2,952,343
Seaboard Air Line	3 mos.	6,790	10,264,662	2,397,570	13,737,111	1,857,477	2,394,189	256,534	4,617,815	338,901	3,392,941	3,166,998
Seaboard Air Line	3 mos.	6,790	27,453,365	7,509,899	37,944,854	5,406,826	6,712,824	739,952	13,313,738	908,656	27,422,593	7,300,381
Alabama Great Southern	318	748,098	140,772	943,587	129,115	181,865	20,466	272,637	21,116	621,294	275,769	279,249
Alabama Great Southern	3 mos.	318	1,995,773	443,857	2,598,219	379,529	489,374	795,806	71,022	1,818,391	605,112	634,512
Alabama Great Southern	3 mos.	338	1,558,341	370,536	2,051,542	278,451	377,448	57,474	56,908	1,589,928	1,616,926	1,581,585
Alabama Great Southern	3 mos.	338	4,312,749	1,183,996	5,856,321	1,050,180	1,693,148	130,597	3,893,239	1,963,082	1,616,926	1,659,821
Georgia Southern & Florida	401	507,703	170,782	729,679	89,035	93,510	18,890	280,618	13,368	499,793	203,052	137,286
Georgia Southern & Florida	3 mos.	401	1,352,383	556,631	2,007,408	252,916	259,965	54,212	813,941	37,214	1,452,491	1,241,095
Georgia Southern & Florida	3 mos.	207	454,714	74,967	569,771	76,432	161,607	13,304	329,212	15,077	445,077	327,284
Georgia Southern & Florida	3 mos.	207	1,254,838	228,750	1,587,926	197,961	231,223	37,939	987,698	141,935	1,452,491	1,241,095

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1926—CONTINUED

Name of road	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents, 1925.
		Freight.	Passenger.	Total (inc. misc.)	Maintenance of way and structures.	Trans- portation.	General.				
Northern Alabama	Mar. 110	\$116,808	\$8,754	\$125,562	\$24,443	\$2,107	\$3,101	59.3	\$52,224	\$45,085	\$16,273
3 mos.	339,026	27,235	373,881	73,193	17,457	6,868	8,744	61.2	145,266	127,654	38,665
Southern Pacific	Mar. 8,769	12,448,129	3,583,615	17,574,772	2,766,852	340,521	629,317	71.9	4,936,093	3,449,411	3,282,973
3 mos.	33,079,343	10,178,984	47,224,772	8,624,271	7,400,201	1,005,380	1,806,810	75.5	11,546,860	7,503,050	7,108,989
Atlantic Steamship Lines	Mar. ...	928,927	41,442	1,139,389	15,728	171,540	33,667	84.2	178,748	171,967	171,836
3 mos.	2,502,368	107,669	3,039,709	45,524	478,101	42,852	101,435	87.2	387,806	354,012	342,214
Galveston, Harrisburg & S. Antonio	Mar. 2,104	1,843,394	443,401	2,447,829	450,418	900,578	110,164	84.6	375,905	280,557	288,649
3 mos.	5,095,235	1,360,691	6,955,289	1,483,441	1,279,260	1,663,327	324,678	84.4	1,082,145	764,761	461,205
Houston & Texas Central	Mar. 891	735,692	218,300	1,043,470	239,876	229,788	49,250	88.1	123,703	49,218	35,430
3 mos.	2,351,096	629,776	3,240,366	621,725	744,437	1,122,898	143,566	83.8	523,626	326,403	307,585
Houston, East & West Texas	Mar. 191	223,511	36,600	273,498	42,532	54,908	10,138	75.0	68,406	34,498	37,191
3 mos.	612,829	105,254	756,921	140,089	159,080	226,508	30,403	74.8	190,797	146,459	97,933
Louisiana Western	Mar. 207	226,668	73,673	321,449	49,585	15,212	20,788	77.4	72,404	46,100	41,825
3 mos.	668,114	238,120	975,349	144,531	168,238	47,860	60,351	75.4	239,746	159,551	130,927
Morgan's L. & T. R. R. & S. S. Co.	Mar. 400	481,908	120,300	622,995	156,584	23,274	36,427	103.4	22,769	-74,043	-83,905
3 mos.	1,473,596	393,617	2,058,661	467,419	492,854	71,502	110,346	99.4	11,424	-141,830	-192,991
Texas & New Orleans	Mar. 544	671,851	146,092	874,867	189,987	264,327	36,303	79.3	181,201	146,008	124,534
3 mos.	1,942,413	438,699	2,546,552	507,670	477,085	984,766	105,594	83.8	411,622	306,099	132,599
Spokane, Portland & Seattle	Mar. 554	481,286	94,209	632,308	93,236	91,714	20,854	66.6	211,379	134,068	113,603
3 mos.	1,323,730	283,028	1,777,437	247,586	287,856	564,760	62,190	68.1	566,443	335,046	293,886
Tennessee Central	Mar. 296	236,217	29,024	282,883	52,664	100,539	12,246	77.4	63,806	-58,355	33,956
3 mos.	672,057	92,363	809,905	165,721	131,593	298,829	36,446	80.8	155,880	137,680	65,341
Terminal R. R. Assn. of St. L.	Mar. 55	.....	.....	1,148,464	117,806	455,807	24,995	63.9	415,001	302,644	317,447
3 mos.	.....	.....	3,317,646	411,889	292,955	1,343,497	66,647	64.3	1,185,069	867,648	1,113,816
Toledo, Peoria & Western	Mar. 248	82,928	22,145	114,691	19,886	64,779	6,895	109.0	10,301	-17,301	-17,182
3 mos.	256,178	67,028	350,951	92,228	56,339	194,636	20,993	105.6	19,513	-40,547	-43,994
Trinity & Brazos Valley	Mar. 367	119,190	8,301	134,528	31,073	75,544	13,000	116.3	21,888	-29,602	-49,827
3 mos.	422,056	26,014	468,842	151,587	95,534	254,522	40,001	118.2	85,184	-108,299	-176,655
Ulster & Delaware	Mar. 128	39,291	9,705	82,534	14,419	47,574	5,550	105.4	87,010	-10,226	-12,277
3 mos.	77,699	24,794	193,902	41,045	49,803	124,672	17,303	122.1	42,846	-60,096	-63,739
Union R. R. of Penna.	Mar. 45	.....	.....	908,490	111,744	449,411	9,624	85.9	127,889	106,000	167,561
3 mos.	.....	.....	2,525,293	277,675	660,011	1,306,229	28,421	90.0	252,410	198,544	327,225
Union Pacific	Mar. 3,691	6,715,030	1,202,615	8,668,757	1,092,654	2,344,083	298,074	68.3	2,746,526	2,042,204	1,976,833
3 mos.	17,925,411	3,508,546	23,486,182	2,365,995	5,448,506	6,867,585	875,166	70.0	7,047,689	4,968,036	4,382,049
Oregon Short Line	Mar. 2,537	2,433,677	333,774	2,969,916	522,382	48,270	120,358	73.0	801,083	542,529	480,652
3 mos.	6,743,361	995,447	8,273,443	1,302,865	1,656,696	139,479	348,568	74.4	2,126,337	1,352,838	1,201,096
Oregon, Wash. R. R. & Nav. Co.	Mar. 2,237	1,819,531	298,022	2,324,695	562,614	834,298	116,216	86.1	322,696	151,411	56,598
3 mos.	4,887,710	897,473	6,222,909	1,228,212	1,135,516	2,424,572	343,952	85.5	919,731	405,717	161,031
Los Angeles & Salt Lake	Mar. 1,207	1,602,823	358,359	2,132,391	426,619	624,306	71,508	82.4	375,886	242,954	133,707
3 mos.	4,300,382	996,206	5,806,365	1,279,252	1,256,110	1,913,893	206,433	86.9	758,024	359,163	110,902
St. Joseph & Grand Island	Mar. 258	284,757	15,510	316,429	48,573	102,426	15,136	68.5	99,583	76,707	60,353
3 mos.	828,082	52,426	942,656	125,593	135,604	304,995	44,781	67.0	304,699	234,793	189,114
Utah	Mar. 111	107,780	119	108,397	7,162	25,628	6,109	72.3	30,034	20,550	17,123
3 mos.	396,374	492	398,347	39,726	115,447	92,967	19,246	67.4	129,958	101,505	88,772
Virginian	Mar. 545	1,515,109	64,817	1,710,001	212,734	387,531	29,063	58.8	704,092	568,083	639,071
3 mos.	4,655,802	184,072	5,102,135	587,584	1,067,761	1,178,847	93,664	57.0	2,240,290	1,525,167	2,073,827
Wabash	Mar. 2,524	4,872,794	680,987	5,957,205	697,198	2,319,196	176,835	73.6	1,520,107	1,300,107	1,483,032
3 mos.	13,435,504	2,668,204	16,652,235	1,857,082	2,992,793	6,661,702	517,112	73.3	4,106,108	3,255,744	2,390,722
Western Maryland	Mar. 804	1,711,011	45,429	1,815,911	226,720	566,953	44,584	71.8	511,837	431,837	398,160
3 mos.	5,232,026	141,012	5,533,129	651,081	1,252,253	1,751,680	133,384	71.0	1,606,093	1,371,093	1,261,866
Western Pacific	Mar. 1,042	2,611,409	337,764	3,122,735	425,792	1,153,417	105,188	70.2	650,357	377,889	678,684
3 mos.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wheeling & Lake Erie	Mar. 511	1,611,401	34,227	1,725,903	202,193	494,091	44,990	70.8	504,688	363,303	359,993
3 mos.	4,294,881	109,724	4,643,487	513,954	1,189,253	1,461,549	138,576	73.3	1,240,026	849,379	888,342

General News Department

(Continued from page 1329)

"The road does not form part of the Canadian National Railway System. It is still controlled and administered by the government of Canada and is under the direct supervision of the Minister of Railways. As for the work of maintenance and completion—I would rather say at present the maintenance work—the Minister of Railways has asked the Canadian National authorities to proceed with it for him, because they have the equipment and can do it to far better advantage than any outside party. The work that they do is controlled by the government engineer, and they are proceeding under the direction and with the concurrence of the Minister of Railways as advised by his own staff. The sums that are being voted, the twelfth for last month and most probably the twelfth for this month, would have to be spent anyway on maintenance work on the part of the line on which rail has been laid. The work is proceeding under the general authority of Parliament. All the governments that have been in power since 1902 or 1904 have accepted the policy of building the railway, and have proceeded with the concurrence of both branches of Parliament to do that work."

Commercial Stocks of Coal, April 1

An inventory of coal stocks as of April 1, shows 40,000,000 tons of bituminous coal in the hands of consumers, according to the Bureau of Mines, Department of Commerce. This is slightly lower than at a corresponding period last year, but about midway between the stock figures of June 1 and September 1, 1925. The trend since the beginning of the year has been gradually downward to more normal proportions. Consumption continues to be more than production, which, during February and March, has ranged downward from 12,167,000 to 9,626,000 tons a week, indicating greater inroads upon stocks. At the rate prevailing during February and March this year, there was on April 1 a supply sufficient to last 26 days. This is 11 days less supply than in March a year ago, the nearest like date for which figures are available for comparison, but four days greater supply than on March 1, 1923. There were, in addition to the tonnage in consumers' hands on April 1, about 2,900,000 tons of coal on the Lake Superior and Lake Michigan docks; slightly less than 200,000 tons stored by the producers at the mines or at points between the mines and market; and approximately 1,000,000 tons loaded in cars but unbilled at mines. The first of these items is lower, as is normal at the end of the coal year, and the other two items higher than on February 1.

The total quantity of railroad fuel on hand April 1, according to information received from the American Railway Association, was 9,090,000 tons, or approximately a 23-days' supply.

Franklin Medal to Samuel Rea

The Franklin medal, awarded annually by the Franklin Institute, of Philadelphia, in recognition of notable achievements in science and art goes this year to Samuel Rea, former president of the Pennsylvania Railroad, "in recognition of his outstanding work in the conception and construction of railroads, their terminals, tunnels and bridges, and of his eminently successful application of the principles of science, economics and human relations to railway engineering and administration, in which he displayed vision, imagination and courage of high order."

In accepting the medal, at the meeting of the Institute in Philadelphia on May 12, Mr. Rea gave extended reminiscences of his acquaintance with noted railroad engineers during his active career of more than 55 years—John Edgar Thomson, William Hasell Wilson, Moncure Robinson, John H. B. Latrobe and others. The last named, brother of B. H. Latrobe, for many years chief engineer of the Baltimore & Ohio, had been present at the laying of the first stone of the Baltimore & Ohio, on July 4, 1828, so that his experiences, with those of Mr. Rea, covered the first century of the American railroad era.

Speaking of Gustav Lindenthal, designer of the Hell Gate bridge, Mr. Rea referred to the proposal to build a bridge across the Hudson at New York City, and called attention to the fact that the officers of the Pennsylvania saw the need of this bridge as far back as 1874. Mr. Lindenthal prepared a plan for such a bridge for the Pennsylvania in 1884. Mr. Rea is satisfied that the cost of such a bridge for highway, suburban and local traction use would be fully justified. Mr. Rea, who had the immediate responsibility of

directing the activities of the Pennsylvania Railroad which culminated in the present station in Manhattan and the tunnels under the Hudson and East Rivers, began his study of that subject in 1884.

Air Brake Convention Adjourns

The Air Brake Association concluded its thirty-third annual convention at New Orleans, May 7, and this meeting, a partial report of which appeared on page 1253 of the May 8 *Railway Age*, was the largest and in many respects the most successful in the history of the association. The final registration was 852 members and guests. Washington, D. C., was selected as the meeting place for the 1927 convention. Officers chosen for the ensuing year are: President, M. S. Belk, Southern; first vice-president, H. A. Clark, Soo Lines; second vice-president, H. L. Sandhas, C. R. R. of N. J.; third vice-president, W. W. White, N. Y. C. Otto Best, Nathan Manufacturing Company, was returned to the position of treasurer, F. M. Nellis, Westinghouse Air Brake Company, being permanent secretary. One new member was elected to the executive committee, E. C. Mann, A. C. L.

The exhibit also exceeded in size any previously held, 51 supply companies being represented. The value of this exhibit was strongly emphasized on the convention floor by several members who said that the technical information furnished by the engineers and experts of the supply companies has become an important feature of the convention. The Air Brake Appliance Association held its annual meeting during the convention and elected the following officers: President, Fred Speer, Gustin-Bacon Manufacturing Company; secretary-treasurer, J. H. Ainsworth, A. M. Byers Company. The terms of three of the executive committee members expired and the following were elected to take their places: C. R. Busch, Buffalo Brake Beam Company; W. A. Houston, Joseph Dixon Crucible Company; and R. F. Duysters, Simmons-Boardman Publishing Company.

Says Waterway Will Not Interfere with Railroads

A direct ocean route from Chicago territory to trans-Atlantic markets would stimulate industrial and agricultural growth with a resulting benefit to all classes of business, including that of railroad transportation, according to Fred W. Sargent, president of the Chicago & North Western, before the Rotary Club of Chicago, at a luncheon at the Hotel Sherman, on May 4. He elaborated upon the development of railroads in connection with the history of Chicago and explained some of the improvements in car construction which have taken place in the last few years, including glass-lined milk cars, cattle cars and sleeping cars. "There would seem to be little doubt but that if ocean-going steamers might dock in Lake Michigan ports the advantages would be tremendous. There are those, however, who question this statement. They argue that the route could only be kept open a few months out of each year and that if the tonnage moved was in sufficient volume to justify the cost it would so lessen the traffic density of the railroads as to make it necessary to apply sufficiently higher rates to what remained to more than offset any possible economies. They argue that there must be transportation in the winter as well as in the summer; that now the only season that the railroads make a profit is in the summer and fall when tonnage is moving freely and in large volume. They also argue that to materially lessen this volume would mean either the abandonment of rail transportation or higher rates for thinner traffic and since the former is impossible the latter would be unavoidable. I believe, however, that these fears are not well founded."

"I am not so hopeful over the results to be expected from a barge canal connecting the Great Lakes with the Gulf. The Hudson is not now able to compete with the New York Central in any large way. The New York Barge Canal is a hopeless failure. What it cost in taxes alone would have paid the freight on all its tonnage by rail and left a surplus to be returned to the taxpayers. The Hennepin canal cannot compete with the railroads. Engineers say it is because of only a six-foot draught of water but I predict a nine-foot draught will be as antiquated and not of date compared to the progress of railroad transportation ten years hence as a six-foot canal is today. But whether right or wrong in this view, I am sure that co-ordination and co-operation between proposed water routes into Lake Michigan ports and the rail routes radiating therefrom will be forthcoming to the end of finding a constantly enlarging market for the products of industry."

Proposed Railroad Legislation

The Senate on May 10 passed the bill introduced by Senator Harris of Georgia, S. 951, making it unlawful for a common carrier to use a car other than a steel or steel underframe car between or in front of steel or steel underframe cars in any train used in whole or in part for the transportation of passengers.

The Senate has also passed the bill to give military status to the Russian Railway Service Corps.

The Senate on May 10 also passed S. 1344, introduced by Senator Sheppard of Texas, to extend the liability of the initial carrier on a through bill of lading, to shipments reconsigned or diverted in accordance with applicable tariffs.

Senator Bruce of Maryland has introduced a bill for the relief of common carriers that have allowed credit to the federal government for transportation by providing for a period of two years for the filing of claims which may have been barred by statutes of limitations to meet the situation caused by the delays in adjusting such accounts caused by a shortage of accounting personnel during and following the war.

The bill would reinstate claims heretofore decided against the roads by reason of such statutes.

Senator Howell of Nebraska has introduced a bill in the Senate to require railroads to sell their securities on competitive bidding to the highest bidder.

A program of proposed legislation for the balance of this session of Congress announced by Representative Tilson, majority floor leader of the House, does not include any reference to any of the pending railroad bills.

Hearings were held at Washington by the House committee on interstate and foreign commerce on May 7 and 8 on the bill to provide for a refunding for 30 years at not less than 4¼ per cent of railroad indebtedness to the government. E. G. Buckland, vice-president of the New York, New Haven & Hartford, testified on May 7 and, in addition to facts previously given before the Senate committee, presented a statement showing that if the railroads had been returned by the government after federal control with the same earning capacity as when taken over—that is, with the same operating ratio as that of the test period—and that operating ratio had been maintained during the past five years, the net revenues of the principal roads now in debt to the government would have been \$564,000,000 greater than it was, whereas the indebtedness of the same roads to the government is but \$280,000,000. This led to a general discussion of the acts of the Railroad Administration and the responsibility for the increases in railroad expenses. Several members of the committee asked questions indicating a feeling that it would be discriminatory for the government to allow the railroads that have been unable to finance themselves in the market a lower rate of interest than is paid by the stronger roads that have paid off their government notes. Charles S. Dewey, assistant secretary of the Treasury, read a letter from Secretary Mellon similar to that sent to the Senate committee, favoring the bill with the amendments which were later adopted by the Senate committee. On May 8 further testimony in support of the bill was given by Joseph S. Frelinghuysen, representing the holders of junior bonds of the Chicago, Milwaukee & St. Paul, and J. D. Shatford, chairman of the Railroad Owners' Association.

A bill declaring all railroad, telegraph, telephone and express properties in the United States used in the transaction of interstate business to be the property of the United States government under conditions of acquirement set forth in the bill, has been introduced in the House by Representative Berger of Wisconsin, as H. R. 11,944. It provides that Congress shall select a commission of twelve persons "known generally as experts in the valuation of such properties" to supervise an appraisal to be made by a subcommission of five experts in each case, and that government 4 per cent bonds shall be exchanged for the existing securities at a pro rata value based on the values ascertained. It is proposed that Congress shall create a Department of Transportation and Telegraphs to "control" the railroad, telegraph and telephone properties, without saying whether the department would operate them, and that the Postoffice Department shall take over and operate the express properties. There is also a provision for a workday not in excess of eight hours and "at least the rate of wages prevailing at the time of acquirement."

Senator Copeland of New York has introduced a bill similar to that introduced in the House by Representative Shallenberger to

amend section 26 of the interstate commerce act to provide a penalty of \$1,000 a day for failure to comply with an automatic train control order of the Interstate Commerce Commission.

Beatty Opposes Subsidy to

Compensate for Low Rates

Addressing the 45th annual meeting of the shareholders of the Canadian Pacific held in Montreal on Wednesday, May 5, E. W. Beatty, the president, declared that federal legislation which would provide for lower freight rates by means of government subsidy to the railways and heavier taxation is unsound both from the standpoint of the country itself and of the interests of the transportation companies. The shareholders approved the lease from the Boston & Maine of the Connecticut & Passumpsic Rivers, from Wells River Junction to Newport, a distance of 64 miles.

The meeting approved of the joint track agreement with the Canadian National for the joint use of the C. P. R. lines from Kamloops to Bostock and from Armstrong to Vernon, and of the Canadian National line from Vernon to Kelowna, with a branch from a point near Vernon to Lumby.

Approval was given by the meeting, of the agreement with the C. N. R. for the joint use of the C. P. R. lines from Fredericton to Fredericton Junction, and from Fredericton Junction to a point of connection with the Maine Central at Vanceboro, Me.

The agreement with the city of Regina as to the construction of a company hotel there was approved. The estimated cost of the hotel is \$1,500,000.

The motion authorizing expenditure on branch lines was approved. A line of 20 miles on the Cutknife-Whiteford Lake branch, mileage 95 to 115, a mileage of 20 miles on the Bromhead of Tribune westerly, and a 29-mile extension from Cardston to Glenwoodville are to be undertaken.

Authorization for expenditure of up to \$15,000,000 for seven new vessels, of which two will be 18,000-ton passenger boats and five cargo boats, was carried on motion of William McMaster, seconded by Alister F. Mitchell.

Mr. Beatty, in his annual address, said in part:

"As in previous years, and because of its importance, I find it necessary to again advert to the freight rate situation in Canada. Under orders-in-council passed last year and in the early part of this year, the Railway Commission has been directed to embark upon an extensive enquiry looking to the equalization, so far as that is possible, of the freight rate structure in Canada. While the orders-in-council are, of course, incapable of overriding the definite provisions of the statute on the subject of rates, they indicate the attitude of the government and have, therefore, an important influence on the position from which the situation is viewed. Unfortunately, it may be assumed that the word 'equalization' only has one meaning in the minds of those seeking changes in the present rate scales and that is that the rates which they complain of should be reduced to a lower basis than that which presently exists, and their contentions would, therefore, only be satisfied by lower scales. It is, I know, quite superfluous for me to assure you that in the present condition of operating costs the railways of Canada cannot afford reductions in revenues. To meet the needs of the carriers which are, I think, pretty generally recognized throughout the country, various suggestions have been made, the one most prominently mentioned being that the government should by way of subsidy make up the difference between rates found to be reasonable and remunerative and a lower basis considered to be expedient.

"I do not need to indicate to you the danger which lies in those attempts to correct by preferential treatment involving additional taxation, the disabilities which are claimed to exist and which cannot help but exist in a country of such great distances as prevail in Canada. The provisions of our Railway Act respecting rates are sound and are in entire consonance with the provisions of similar legislation in countries where a close regulation of railway charges and services is in effect. Taxation in Canada is still heavy, and the proposals are tantamount to a further tax on the whole people in the interest of shippers from individual parts of the country.

"Apart altogether from the unnaturalness of this proposed method, it is one which is not free from danger to this company in that the greater the transportation burden which is put upon the shoulders of the whole people, the greater the tendency towards nationalization."

Revenues and Expenses for March

Class I railroads in March had a net operating income of \$94,522,911, which was at the annual rate of return of 5.13 per cent on their property investment, according to reports compiled by the Bureau of Railway Economics. In March, 1925, their net operating income was \$73,375,266 or 4.08 per cent on property investment.

Operating revenues for March amounted to \$530,453,464, compared with \$486,679,772 in March, 1925, or an increase of 9 per cent. Operating expenses were \$396,473,050, compared with \$377,412,762, or an increase of 5 per cent. Twenty-six Class I roads operated at a loss, of which 8 were in the Eastern district, 1 in the Southern district and 17 in the Western district.

For the first quarter of 1926 the net operating income was \$223,558,765, at the annual rate of 4.80 per cent. For the first quarter in 1925, the net operating income was \$204,605,982 or 4.50 per cent.

Operating revenues for the quarter amounted to \$1,471,653,158, compared with \$1,426,904,819 last year or an increase of 3 per cent. Operating expenses totaled \$1,135,712,162, compared with \$1,117,081,454, or an increase of nearly 2 per cent. Maintenance expenditures for the three months amounted to \$503,531,655, an increase of \$11,568,792. Expenditures for maintenance of equipment amounted to \$319,237,073, an increase of more than \$305,000, while maintenance of way expenditures totaled \$184,294,582, an increase of \$11,263,077.

Class I railroads in the Eastern district had a net railway operating income for the first three months of \$109,120,673, which was at the annual rate of 5.53 per cent, as compared with \$99,885,229 and 5.17 per cent last year. Operating revenues of the Eastern district amounted to \$732,365,939, an increase of about 3 per cent, while operating expenses totaled \$574,104,840, an increase of nearly 2 per cent. For March, the net railway operating income in the Eastern district was \$50,336,249, compared with \$36,321,466 in March, 1925.

In the Southern district for three months the net railway operating income was \$43,800,458, at the rate of 5.85 per cent. For the same period last year, the net railway operating income amounted to \$41,048,695, at the rate of 5.74 per cent. Operating revenues in the Southern district for the three months totaled \$226,732,230, an increase of more than 9 per cent, while operating expenses amounted to \$164,219,454, an increase of 8.5 per cent. The net railway operating income of the Class I railroads in the Southern district in March amounted to \$17,343,044, compared with \$16,075,419 in March last year.

Class I railroads in the Western district for the three months had a net railway operating income of \$70,637,634, at the annual rate of 3.66 per cent. For the first three months last year, the roads in that district earned \$63,672,058, which was at the rate of 3.35 per cent. Operating revenues of the Class I railroads in the Western district for the first three months amounted to \$512,554,989, an increase of seven-tenths of one per cent, while operating expenses totaled \$397,387,868, a decrease of one per cent. For the month of March, the net railway operating income in the Western district amounted to \$26,843,618, compared with \$20,978,381 in March, 1925.

The summary follows:

MONTH OF MARCH			
	1926	1925	
Total operating revenues.....	\$530,453,464	\$486,679,772	
Total operating expenses.....	396,473,050	377,412,762	
Taxes	31,004,580	28,281,982	
Net railway operating income.....	94,522,911	73,375,266	
Operating ratio	74.74%	77.55%	
Rate of return on property investment.....	5.13%	4.08%	
THREE MONTHS ENDED MARCH 31			
Total operating revenues	\$1,471,653,158	\$1,426,904,819	
Total operating expenses	1,135,712,162	1,117,081,454	
Taxes	87,817,101	82,337,461	
Net railway operating income.....	223,558,765	204,605,982	
Operating ratio	77.17%	78.29%	
Rate of return on property investment.....	4.80%	4.50%	

EXAMINER C. E. BOLES of the Interstate Commerce Commission in a proposed report has recommended a finding by the commission that public convenience and necessity do not require the operation by the Northern Pacific, the Great Northern and the Oregon-Washington R. R. & N. Company of pooled passenger train service over the line of the Longview, Portland & Northern between Longview Junction and Olequa, Wash., 21 miles.

Traffic News

The Union Pacific has added open top observation cars to two of its trains operating between Portland, Ore., and The Dalles. The cars contain seating accommodations for 92 people.

Through sleeping car service between Milwaukee, Wis., and Omaha, Neb., will be inaugurated by the Chicago, Milwaukee & St. Paul on May 16. Cars will leave Milwaukee at 5 p. m. and will arrive at Omaha at 7:47 a. m. Returning they will leave Omaha at 6:10 p. m. and will arrive at Milwaukee at 9:15 a. m.

The Postmaster General has petitioned the Interstate Commerce Commission for a reconsideration of the case of a number of short line railroads in the intermountain and Pacific coast territory, whose rates for mail transportation were advanced by the commission last year by amounts stated in the petition to exceed 100 per cent. The petition says that a number of the roads, named in the petition, were and are receiving a return of over 5.75 per cent on their property devoted to mail transportation.

The Boston & Maine announces that, beginning May 15, it will out on a new passenger train, the "Minute Man," to run from Boston, Mass., to Troy, N. Y., 190 miles, in five hours, to connect with the Lake Shore Limited of the New York Central. The train leaves Boston at 3 p. m. and the sleeping cars reach Chicago the next day at 4 p. m. Central time. Eastward, the time will be one hour less, departure from Chicago being 5:30 p. m. and the new train arriving in Boston at 7:25 p. m. No extra fare is to be charged.

Joseph Decker, president of the Decker-Patric Company, Salt Lake, Utah, has been elected president of the Utah Shippers' Traffic Association, to succeed Frank B. Cook, resigned. The vice-presidents of the different zones into which the state has been divided to facilitate the business of the organization were elected as follows: Logan zone, George E. Bowen; Salt Lake zone, Roy Bullen; Brigham City zone, Joseph F. Hansen; Ogden zone, W. H. Harris; and Provo zone, Oscar A. Spear. John R. Bruff was elected treasurer, and Leroy Dinwoodey, corporation secretary.

Preparations for Grain Movement

L. M. Betts, manager of the closed car section of the Car Service Division, A. R. A., has issued a circular to the eastern and southern railroads regarding preparations for the coming grain movement, urging them to instruct all local forces that western box cars be loaded to home lines and home territory and that any delays and diversions be avoided. In a letter to the western roads accompanying the circular, Mr. Betts says, in part:

"The situation on western lines as to box-car supply is not as favorable as a year ago, and the crop prospects, as you know, indicate a much heavier movement of wheat, particularly in July, August and September, on account of the expected heavy yield of winter wheat. It is of vital importance to western roads that there be no failure this year to supply all cars required for the wheat movement. Unquestionably, you will have the co-operation of railroads in other parts of the country and of all of the members of the various Shippers' Advisory Boards. At the same time, the chief obligation rests upon the western railroads themselves to prepare for this movement by—

1st. Conditioning their box-car supply to make as many cars as possible suitable for grain;

2nd. Storing equipment in grain-loading territory to the full extent of available facilities in proportion to prospective demands;

3rd. Rigid regulations respecting loading of system cars to avoid their going to points off line, particularly distant points, which can be accomplished by a proper utilization of available foreign equipment;

4th. Care in distribution for loading to avoid cars in first-class condition being used for commodities which will make them unfit for grain or flour.

"Roads in western territory not directly concerned in the winter

wheat movement should issue special instructions regarding the proper handling of cars belonging to southwestern lines who will be called upon to handle the bulk of the initial movement of grain. If cars of these ownerships cannot be loaded to home lines, they should be sent empty as expeditiously as possible."

Jubilee of the Federal Express

In a large poster printed in blue and gold the New York, New Haven & Hartford announces that the Federal Express, the through night passenger train between Boston and Washington celebrated, on May 8, the fiftieth anniversary of its first run, which, however, was only to Philadelphia, the extension to Washington being made a short time afterwards. The Colonial Express, the day train, began its trips four days later. These trains, which then were transferred from the New Haven road to the Pennsylvania by the steamer "Maryland," across New York harbor, were established for the accommodation of passengers to and from the Centennial Exposition at Philadelphia; and the present announcement calls attention to the improvements which may be observed by passengers of 1876, who may take the trip this year to attend the Sesqui-Centennial. In the beginning the trains were run between Boston and Hartford over the New York & New England Railroad, which at that time had not been taken into the New Haven system. The day train was discontinued at the close of the exposition, but later was again put in service, and in 1890 was extended to Washington.

In December, 1888, the night trains were run over the New York & New England from Boston to the Hudson river opposite Newburgh, N. Y., where they were transferred by boat to the Erie Railroad, which took them to Jersey City; but in May, 1890, the service was resumed via New York harbor. In 1893, the trains were taken off the New England line and since then have traveled over the Shore line via New London.

In 1912 the trains were run from New Haven to Poughkeepsie and thence over the bridge across the Hudson River and to Belvidere, N. J., over the Lehigh & Hudson River. This continued until the opening of the Hell Gate bridge, April 1, 1917, when the route via New York City was restored. The run from the New Haven tracks over the bridge and through the East River tunnel to the Pennsylvania station now takes 17 minutes, as compared with two hours allowed for the boat transfer to Jersey City in the earlier years. The night train now has sleeping cars between Boston, Mass., and Miami, Fla.

Motor Transport News

St. Paul and Omaha Motorize Twin Cities Terminal

Motor trucks and trailers will be used for the pick-up and delivery of l. c. l. shipments in Minneapolis, Minn., and St. Paul by the Chicago, Milwaukee & St. Paul and the Chicago, St. Paul, Minneapolis & Omaha, instead of trap cars which have been used in the past, under contracts which have been entered into with the Murphy Transfer Company of Minneapolis. The service being inaugurated by the Omaha and the St. Paul is similar to that which was adopted by the Great Northern some time ago. It is reported that other roads in the Twin Cities district are considering the adoption of similar plans.

Commutation Tickets on Great Northern Bus Lines

Commutation tickets for the transportation of passengers between Minneapolis, Minn., and Lake Minnetonka will be interchangeable, good either on the trains of the Great Northern or the buses of the Northland Transportation Company, the bus-operating subsidiary of the railway, under an order of the Minnesota Railroad and Warehouse Commission. Application to make such tickets interchangeable was made by the Northland Transportation Company and concurred in by the Great Northern. The interchange privilege applies only to two classes of commutation books, one containing tickets for ten rides and the other for twenty-five rides. The monthly books, with tickets for 50 rides, are not interchangeable, and these tickets will not be accepted on Northland buses because the price of the tickets in the 50-ride books is substantially less than those of the 10 and 25-ride books and the rates are too low to permit the Northland to carry passengers on them without incurring a loss.

Commission and Court News

Interstate Commerce Commission

Rates on fresh meats and packing house products from Sioux Falls, S. D., and Mason City, Waterloo, Cedar Rapids, Des Moines, and Ottumwa, Ia., to destinations in Oklahoma and Texas have been found unreasonable by the commission to the extent that they exceed a scale of rates prescribed in the report.

Pending a determination on the application of the Southern Pacific Morgan Line for fourth section relief, the commission has authorized the establishment and maintenance of class and commodity freight rates between points on the Atlantic seaboard and points in the Southwest over its line between New York and Galveston and Houston, Tex., and the line between Baltimore and Galveston, the same as the rates contemporaneously maintained on like traffic between the same points in connection with competing steamship lines operating between North Atlantic and Gulf ports, without observing the long-and-short-haul provision of the fourth section.

Rates on fuel oil from the midcontinent field and from California to destinations in Arizona and New Mexico were found not unreasonable in a report issued by the commission on May 12. The relationship of fuel-oil rates from California to Arizona with those from the midcontinent field to the same destinations was found not unduly prejudicial, with the exception of the rate on fuel oil from Galveston and other points in Texas to Douglas and Bisbee, Ariz. Rates on refined oil from the midcontinent field to Arizona and New Mexico, from California to Arizona, and from El Paso to certain destinations in those states were found unreasonable. Reasonable rates were prescribed for the future and reparation awarded.

Court News

Regulation and Use of Industrial Tracks

The Illinois Supreme Court holds that a railroad company and the private owner of an industry cannot, by any agreement between themselves, build a track and limit its use to certain shippers: when it is constructed it is open to public use and regulation without regard to who paid the cost of construction. But a private agreement between an industrial owner building a connecting track and the railroad in no way affecting its use by the public is not prohibited by law or contrary to public policy.—*Von Oven v. C. B. & Q.*, 317 (Ill.) 334, 148 N. E. 32.

Certificate of I.C.C. Not Necessary

Before Construction of Interstate Road

The federal district court for southern Texas holds that the Interstate Commerce Act, §1, as amended by Transportation Act 1920, §402, pars. 18 to 22, requiring railroads subject to the act to obtain a certificate of convenience and necessity before constructing a new line, does not apply to the construction by a new railroad company of a track wholly within a state before it becomes engaged or offers to engage in the actual transportation of interstate freight and passengers.—*Texas & N. O. v. North Side Belt*, 8 Fed. (2d) 153.

Violation of Federal Safety Appliance Act

Precludes Defense of Contributory Negligence

Where the evidence tended to show that a coupler did not couple automatically by impact, and a brakeman was injured by a mistake in signals when he went between the cars to adjust it, the Circuit Court of Appeals, Third Circuit, holds that it should have been left to the jury under proper instructions to determine whether or not the railroad violated the Safety Appliance Act, and if it did any contributory negligence of the brakeman would, under Employers' Liability Act, section 3, have been eliminated.—*Auchenbach v. P. & R.*, 3 Fed. (2d) 350.

Foreign Railway News

British Strike Ends

The British general strike called in sympathy with striking miners on May 3 ended on May 12, the strikers returning to work unconditionally as the government demanded but with the assurance that they would be treated fairly and the miners' grievances considered. The railways expect to restore normal service within a few days.

Cuban Roads Tied Up by Strike

Railroad traffic in Cuba came virtually to a standstill on May 11 following the strike of the organized railroad employees. President Machado of Cuba at that time issued an ultimatum to the strikers demanding that they return to their posts within 72 hours. If they should obey this ultimatum he would act as arbiter in their dispute with the railroad companies. Meantime he advised the railroad managements to resume service at once and has promised military protection. Following the receipt of the ultimatum the leaders ordered the strikers to return to work.

New Chief Executive of L. M. S.

Sir Josiah Charles Stamp, G. B. E., the recently elected president of the executive of the London, Midland & Scottish, who is in this country observing and studying American railway practice, came to the railway from an outside industry. He entered the British civil service in 1896 in the inland revenue department and in 1898 went to the marine department of the Board of Trade. In 1900 he entered the services of the taxes department and in 1914 was transferred to the secretariat. In 1916 he was advanced to the assistant secretaryship of the board. He has had a wide experience in public activities, having been British representative on the Dawes committee and a member of many other boards and committees of similar national character. He is the author of a number of works on public finance, government, economics and statistics. At the time of Sir Josiah's election to his present position he was serving the Nobel Industries, Ltd., in an administrative capacity. His present position, incidentally, is unique in British railway practice and was created as a means of meeting some of the perplexing problems which have arisen following railway amalgamation. Sir Josiah was educated at London University, receiving the degree of B. Sc. in 1911 and D. Sc. in 1916. He was a lecturer on statistics at this institution in 1919-20 and has been active in the Royal Statistical Society for a number of years.



Sir Josiah Stamp, G. B. E.

South Australia Purchases American Equipment

During the two years 1924-1925 the South Australian Railways purchased American railway equipment valued at £1,916,134, according to assistant trade commissioner Foster at Melbourne. This equipment consisted of rail motor cars, automatic signaling apparatus, electric headlights, gasoline for motor cars, coal-handling machinery, steel freight cars, and such accessories as lubricators, injectors, fire doors, grate shakers, safety valves, whistles, stokers, couplers, railway shop machines, and other material of like nature. A number of rail-motor passenger-car chassis, trailers, and complete rail-motor passenger cars were also among the purchases.

Equipment and Supplies

Locomotives

THE LOUISVILLE & NASHVILLE is making inquiry for 32 locomotives.

THE ILLINOIS CENTRAL is inquiring for 50, 2-8-4 type locomotives. This is in addition to this company's inquiry for 20 Mountain type locomotives which was noted in the *Railway Age* of April 24.

THE SOUTH AFRICAN RAILWAYS & HARBORS have ordered 23 Mountain type locomotives from the American Locomotive Company. Inquiry for this equipment was reported in the *Railway Age* of March 6.

THE ESSEX TERMINAL has ordered one six-wheel switching locomotive from the American Locomotive Company. This locomotive is to have 20-in. by 26-in. cylinders and a total weight in working order of 145,000 lb. Inquiry for this equipment was reported in the *Railway Age* of May 1.

Freight Cars

THE ATLANTIC COAST LINE is inquiring for 50 caboose cars.

THE PERE MARQUETTE is inquiring for 30 hopper coal cars of 30 tons' capacity.

THE YOUNGSTOWN SHEET & TUBE COMPANY is inquiring for one special rolling mill railroad car of 120-tons' capacity.

THE PUBLIC SERVICE COMPANY OF NORTHERN ILLINOIS is inquiring for one flat car, two hopper cars and three gondola cars.

THE CUSHING REFINING & GASOLINE COMPANY, Tulsa, Okla., is inquiring for 10 insulated, class 4 tank cars of 8,000 gallons capacity.

THE MISSISSIPPI WARRIOR SERVICE, FEDERAL BARGE LINE is inquiring through the car builders for 40 general service, all steel, drop bottom gondola cars of 50 tons' capacity and for 20 steel underframe flat cars of 50 tons' capacity.

Passenger Cars

THE LOUISVILLE & NASHVILLE is inquiring for 12 baggage cars and 15 combination baggage and mail cars.

THE EAST BROAD TOP RAILROAD & COAL COMPANY has ordered one combination passenger and baggage, gas-electric motor car from the J. G. Brill Company.

THE READING COMPANY has ordered 25 steel coaches and 5 steel combination passenger and baggage cars from the Bethlehem Shipbuilding Corporation. Inquiry for this equipment was reported in the *Railway Age* of April 10.

THE CENTRAL VERMONT has ordered two combination passenger and baggage, gas-electric motor cars, one combination mail and baggage trailer car, and one combination passenger and baggage trailer car, from the J. G. Brill Company.

Iron and Steel

THE MISSOURI PACIFIC has ordered 375 tons of structural steel for use at Kragen, Ark., from the Virginia Bridge & Iron Company.

THE CHICAGO & WESTERN INDIANA has ordered 1,350 tons of structural steel for the separation of its tracks from those of the Illinois Central at Kensington, Ill., from the American Bridge Company, and 775 tons for subway bridges at Chicago from the McClintic-Marshall Company.

Machinery and Tools

THE ATCHISON, TOPEKA & SANTA FE is inquiring for one cold saw cutting off machine.

THE CHICAGO, BURLINGTON & QUINCY is inquiring for three motor-driven dry grinders.

THE BALTIMORE & OHIO has ordered one automatic valve grinder from Manning, Maxwell & Moore, Inc.

THE WABASH has ordered one 18-in. engine lathe and one 34-in. upright drill from Manning, Maxwell & Moore, Inc.

THE BOSTON & MAINE has ordered one 1,500-lb. Chambersburg steam hammer from Manning, Maxwell & Moore, Inc.

THE MISSOURI-KANSAS-TEXAS has ordered one 48-in. Putnam car wheel borer from Manning, Maxwell & Moore, Inc.

THE ELGIN, JOLIET & EASTERN has ordered a 600-ton Chambersburg hydraulic wheel press from Manning, Maxwell & Moore, Inc.

THE CHICAGO, ROCK ISLAND & PACIFIC is inquiring for one motor-driven planer, one engine lathe, one motor-driven upright drill, and one heavy duty lathe.

THE CHICAGO, BURLINGTON & QUINCY has ordered one 55-ton, 55-ft. span bucket handling gantry crane for use at Hannibal, Mo., from the Whiting Corporation.

THE DELAWARE, LACKAWANNA & WESTERN has ordered one 25-ton, four-motor gantry crane from the Milwaukee Electric Crane & Manufacturing Company.

THE DELAWARE & HUDSON has ordered one 90-in. Putnam combination locomotive journal lathe and one Sundrand radius link grinder from Manning, Maxwell & Moore, Inc.

Signaling

THE CHICAGO, ROCK ISLAND & PACIFIC has ordered from the Union Switch & Signal Company, electro-mechanical interlocking, 13 working units, for Sixty-first street, Chicago.

THE CHICAGO & EASTERN ILLINOIS has ordered from the Union Switch & Signal Company, electro-mechanical interlocking for an addition to the plant at St. Elmo, Ill., where the line crosses the Pennsylvania.

THE ATCHISON, TOPEKA & SANTA FE has ordered from the Union Switch & Signal Company material for the installation of automatic signals on 226 miles of line, all single track; 427 Style "T-2" electric semaphores, 2080 d.c. relays, 213 a.c. relays, 182 switch circuit controllers and other apparatus. This signaling will be between the following points: LaJunta, Colo., and Trinidad, Colo., 82 miles; Lawrence, Kan., and Spencer, Kan., 19 miles; Pauline, Kan., and Emporia, Kan., 55 miles; Morgan, Tex., and Temple, Tex., 70 miles.



Engine Terminal, Durban, South African Railways

Supply Trade News

Harlan W. Bird, merchant engineer, Chicago, has moved his offices to 1926 Conway building, 111 West Washington street.

The Hutchins Car Roofing Company has removed its Chicago office to the Peoples Gas building, 122 South Michigan avenue.

The Sullivan Machinery Company has moved its Knoxville, Tenn., office, of which **E. L. Thomas** is manager, from 614 Market street to 623 Market street.

Alexander S. Henry was, on May 14, elected president of the Railway Steel-Spring Company, Inc., which is now a subsidiary of the American Locomotive Company.



A. S. Henry

Mr. Henry's early experience in the iron and steel business was obtained among the steel mills of the Cleveland district and vicinity, where he served in various capacities, principally in the open-hearth departments. He later entered the employ of one of the steel-tired wheel plants in Cleveland which subsequently became a part of the Steel-Tired Wheel Company, and during its existence he was in charge of the local management of a number of its plants. When the company was merged with the Railway Steel-Spring Company, in

1902, he was called to New York and appointed assistant secretary, acting in a supervisory capacity in the selling and operating departments of the steel-tired wheel and the steel tire divisions of the Company. In 1910 he was elected a vice-president and assumed charge of the operations of the various plants of the company, including the tire-plants at Latrobe, Pa., and Chicago Heights, Ill. In 1920, he was elected a director of the company and a member of the executive committee.

R. L. Cluverius has been appointed southern department manager of the **National Railway Appliance Company**, with headquarters in the Munsey building, Washington, D. C., succeeding **H. W. Kidwell**, resigned.

A. E. Pratt, manager of the railway sales division of the National Carbon Company, with headquarters at Cleveland, Ohio, has resigned to take charge of the railway sales of Duco and other finishing materials of **E. I. Du Pont de Nemours & Co.**, with headquarters at Parlin, N. J.

The Crankless Engine Company of America, 29 Broadway, New York, announces through Dr. E. H. Armstrong of New York that contracts have been signed with a syndicate to manufacture crankless Diesel engines for railway, marine and industrial uses in large quantities. Production will start within 30 days.

Fred C. Rumball, branch manager of the Timken Roller Bearing Service & Sales Company, with headquarters at Kansas City, Mo., has been promoted to sales engineer, automotive division of the **Timken Roller Bearing Company**, with headquarters at Cleveland, Ohio, and will be succeeded by **J. M. Carey**, salesman. **T. F. Rose**, assistant branch manager of the Timken Roller Bearing Service & Sales Company, with headquarters at Chicago, has been promoted to branch manager,

with headquarters at Cincinnati, Ohio. **H. C. Sauer**, assistant branch manager, with headquarters at Cleveland, has been promoted to branch manager, with headquarters at Detroit. The branch office at Baltimore, Md., has been closed and service will be supplied through the Richmond, Pittsburgh and Philadelphia branches.

Herbert H. Moffitt, who has for some time represented the **Union Railway Equipment Company**, of Chicago, as southeastern sales representative, with headquarters at the Woodward building, Washington, D. C., has been appointed vice-president in charge of sales for the southeastern district, with the same headquarters.

C. W. Stokes has joined the **American Brown Boveri Electric Corporation**, and will have his office at Chicago. He is a graduate of McGill University and has for several years been a manager of the **Sterling Engineering Company**, Montreal. Before becoming connected with this company he was the Canadian manager of the **English Electric Company, Limited**.

J. Barraja-Frauenfelder & Co., New York, has been established for a consulting and advisory service on oil and Diesel engines, their application to the industries and the manufacturing or applying of this equipment. The organization is composed of **J. Barraja Frauenfelder**, executive engineer; **Heinrich Schneider**, associate engineer; **Edward C. Magdenburger**, associate engineer, and others who have had many years of theoretical and practical experience in this and allied branches of engineering. Mr. Schneider is an authority on Diesel engine design, testing and manufacturing especially as applied to railroad installation; also an authority on hydraulic transmission. The establishment of a testing laboratory fully equipped for material and other testing also is planned so that complete research work can be carried out within the organization.

Obituary

John Mulligan, president of the **Ulster Iron Works**, Dover, N. J., died on May 5 at Clifton Springs Sanatorium, Clifton Springs, N. Y., at the age of 56.

Henry Fleetwood Albright, vice-president in charge of manufacturing and a director of the **Western Electric Company**, died at the Memorial Hospital, New York City, on May 11 after an illness of several months, at the age of 58.

Victor Angerer, well known in both the street and steam railroad field, died of pneumonia at his home in Ridley Park, Pa., on May 5, at the age of 64. He was a native of Austria, and graduated at the age of 17 from the Technical College in Vienna. Shortly afterwards he came to the United States, and for about four years he was with **William Sellers & Co., Philadelphia**, in the capacity of draftsman. In 1884, he associated himself with **William Wharton, Jr., & Co., Ltd.**, as a mechanical engineer. After serving in various engineering and supervisory capacities he became vice-president and general manager in 1902. For some years he taught in the **Franklin Institute, Philadelphia**. Upon the consolidation of **William Wharton, Jr., & Co., Inc.**, and the **Taylor Iron & Steel Company**, in 1912, when the **Taylor-Wharton Iron & Steel Company** was formed, he was made vice-president of the latter company and of its subsidiaries, **William Wharton, Jr., & Co., Inc.**, **Easton, Pa.**, the **Philadelphia Roll & Machine Company** and the **Tioga Steel & Iron Company, Philadelphia**. In 1922, he was made a director, holding this position until his death. He introduced the use of manganese steel in electric railway track work in 1894 and in steam railroad track work in 1899. He was also author of various general designs of manganese steel track structures now in general use.

THE SEVENTH SEMI-ANNUAL Rock Island official conference was held at Kansas City, Mo., on May 11 and 12, President **James L. Gorman** presiding. More than 200 executive and supervisory officers of the Rock Island Lines attended the conference.

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—A passenger and freight station of Spanish type architecture will be constructed at Claremont, Cal., at an estimated cost of \$35,000.

ATCHISON, TOPEKA & SANTA FE.—A contract has been awarded to **Sprague & Nisely, Beatrice, Neb.**, for the construction of 30 miles of line extending from a connection with the **Panhandle & Santa Fe** near **Panhandle, Texas**, to the oil fields in **Hutchinson county, Texas**, as reported in the *Railway Age* of May 8.

CANADIAN PACIFIC.—A contract has been awarded to **C. F. McDougall, Nelson, B. C.**, for the construction of a steel bridge over the **Kettle river** at **Hummingbird Siding, B. C.**

CHICAGO, ROCK ISLAND & PACIFIC.—The Interstate Commerce Commission has issued a certificate authorizing the construction of a line from **Liberal, Kan.**, to **Amarillo, Tex.**, 145 miles, in accordance with the recommendations recently made in a proposed report by an examiner. The application was opposed by the **Atchison, Topeka & Santa Fe** and the **Beaver, Meade & Englewood**. The cost is estimated at \$7,342,596. The certificate provides that construction shall be commenced on or before October 1, and be completed on or before December 31, 1928.

FLORIDA EAST COAST.—This company has awarded to the **Pittsburgh-Des Moines Steel Company** contracts for water station improvements at **Holly Hill, Fla.**, and **Rio**, to cost approximately \$35,000 and \$30,000 respectively.

NEW YORK, NEW HAVEN & HARTFORD.—This company will construct with company forces a 10-stall extension to its enginehouse at **Cedar Hill, New Haven, Conn.**, to cost approximately \$97,000. The company has also authorized the construction of a new finishing shop, an extension to the locomotive building, etc., at **Readville, Mass.**, to cost approximately \$175,000.

NORTHERN PACIFIC.—Additional team tracks and a switch yard will be constructed at **West Seattle, Wash.** Four acres of land in **West Seattle** has been purchased for this purpose.

PANHANDLE & SANTA FE.—The Interstate Commerce Commission has authorized this company to construct a branch line from a point about a mile west from its **Panhandle, Tex.**, station northerly about 30 miles; estimated cost, \$1,181,590.

PROVINCE OF ALBERTA.—A contract has been awarded to **H. G. MacDonald, Edmonton, Alta.**, for the grading of the 25-mile **Pembina Valley branch line**, extending from a point on the **Edmonton, Dunvegan & British Columbia** between **West Lick** and **Busey**, westward in the direction of **Fort Assiniboine**, as reported in the *Railway Age* of May 8.

ST. LOUIS-SAN FRANCISCO.—Bids for the construction of a one-story brick and concrete passenger station at **Fayetteville, Ark.**, which were received recently, as reported in the *Railway Age* of April 10, have been rejected and new bids will be asked in the near future. The building is estimated to cost \$40,000.

ST. LOUIS-SAN FRANCISCO.—This company has applied to the Interstate Commerce Commission for authority to build a line from **Aberdeen, Miss.**, to **Kimbrough, Ala.**, 152 miles, to connect its present line with the line into **Pensacola**, of the **Muscle Shoals, Birmingham & Pensacola**, of which it recently acquired control.

TREMONT & GULF.—The Interstate Commerce Commission has authorized this company to construct a 4-mile extension eastward from **Denkman, La.**; estimated cost, \$100,130.

VIRGINIAN.—This company has awarded a contract to the **Thomas Company, Inc.**, for lining a tunnel at **Sophia, W. Va.**, at an estimated cost of \$35,000.

WESTERN PACIFIC.—A contract has been awarded to **Eaton & Smith, San Francisco, Cal.**, for the construction of tracks in the industrial district south of **Market street** in **San Francisco**, at an estimated cost of \$200,000.

Railway Financial News

ASTORIA, NORTH SHORE & WILLAPA HARBOR.—*Application Denied.*—The Interstate Commerce Commission has denied the application of this company to issue \$50,000 preferred and \$50,000 common stock. The company purposed to operate a line of railroad in Pacific County, Wash., but its application for a certificate of public convenience and necessity was denied.

ATLANTA & ST. ANDREWS BAY.—The Interstate Commerce Commission has approved the issuance at par of \$200,000 5 per cent promissory notes to be used for the purchase of rail. Of these notes one-half mature in one year and the other half in two years but the notes with other indebtedness of the company constitute over 5 per cent of the outstanding securities of the carrier, and therefore require commission authorization.

ATLANTA, BIRMINGHAM & ATLANTIC.—*Acquisition.*—The application of the reorganization committee on behalf of the Atlanta, Birmingham & Coast for authority to acquire and operate this property and issue securities therefor, and also that of the Atlantic Coast Line for authority to acquire control of the Atlanta, Birmingham & Coast, has been assigned for hearing before Examiner Davis of the Interstate Commerce Commission at Atlanta, Ga., on May 20.

The reorganization committee of the Atlanta, Birmingham & Atlantic has announced that more than 75 per cent of the 5 per cent income mortgage bonds and 5 per cent first mortgage bonds of the road outstanding in the hands of the public had been deposited and were subject to the reorganization plan which involves the sale of the property to the Atlantic Coast Line.

The reorganization committee has extended the time for deposits until the close of business on May 31, after which they say no deposits will be received except upon terms agreed upon by the committee. A decree of foreclosure and sale of the road was entered on April 30 by the United States District Court for the Northern District of Georgia, Northern Division.

BOSTON & MAINE.—*New Securities Under Reorganization Plan.*—Application has been filed with the Interstate Commerce Commission for authority to issue \$13,000,000 of 7 per cent prior preference stock and \$43,522,000 of 5 per cent bonds pursuant to the reorganization plan, the proceeds of the stock to be used during the next three years for improvements and additions, and the bonds to be issued for the purpose of refunding an equal amount of bonds outstanding.

CHICAGO, MILWAUKEE & ST. PAUL.—*Interstate Commerce Commission Hearings.*—The Interstate Commerce Commission hearings which have been going on before Commissioner Cox in the assembly room of the Metropolitan Life Insurance Company at New York closed on May 8 to be resumed at Chicago on May 25.

Jerome J. Hanauer, partner of Kuhn, Loeb & Co., was still a witness on Thursday, May 6. He was followed by William S. Griswold, director of the St. Paul, Thursday afternoon and on Friday by Frederick H. Ecker, vice-president of the Metropolitan Life Insurance Company, by Charles E. Mitchell, vice-president of the National City Bank and on Saturday by W. W. Miller of Hornblower, Miller & Garrison of New York, St. Paul counsel. Mr. Hanauer pointed out that the Globe & Rutgers Fire Insurance Company of which Edwin C. Jamieson of a minority protective committee is president, was recorded as having voted its stock in favor of the Chicago, Terre Haute & Southeastern acquisition but that in recent years it had done nothing to protect its stock interest. He said that he had never been consulted about the acquisition of the Chicago, Terre Haute & Southeastern but thought that it was an advantageous acquisition. He remarked that the Interstate Commerce Commission had favored the acquisition of the Terre Haute by the St. Paul in the Ripley tentative consolidation plan.

William S. Griswold became a director of the St. Paul in 1921. He said that he understood that the Chicago, Terre Haute and Southeastern acquisition was practically consummated about that time and he understood that it was a valuable asset from the standpoint of coal supply. He said he was not optimistic about the St. Paul future from the time he became a director. He thought

the causes of its difficulty were the depression in the Northwest, the unsatisfactory rate structure and the road's capital structure.

Frederick H. Ecker, vice-president of the Metropolitan Life Insurance Company testified that the company held about \$12,000,000 of St. Paul bonds, most of which had been purchased prior to 1917, and he added furthermore that the company owned in all about \$350,000,000 of railroad securities. He said that he advised the sale in 1924 of the St. Paul bonds maturing in 1925 if a price above 80 could be secured and that in conformance with this advice \$500,000 worth of such bonds were sold before the price went below 80. He also gave some details concerning the conferences held with reference to the establishment of protective committees prior to the announcement of receivership.

Charles E. Mitchell, vice-president of the National City Bank said that he first became doubtful about the St. Paul in 1921 when it failed to show proper recovery from the federal control period, and he added that at that time the St. Paul bonds were removed from the salesmen's lists of the National City Company. At that time he also questioned whether the company should not sell its holdings of general and refunding bonds. He quoted William Rockefeller, a member of the executive committee of the National City Bank, as saying, "If you feel those bonds are not a sound investment, send them down to my office and I will give you a check for them." Mr. Mitchell said he first became convinced that receivership was unavoidable in January, 1925, and he referred to the several conferences that were held with reference to finding ways to avoid receivership. He expressed the view that reorganization plan was a reasonable one and denied that the bankers might have favored a receivership because of fees connected with it. Mr. Mitchell became president of the National City Company in 1916 and president of the National City Bank in 1921. The National City Company is one of the reorganization managers.

W. W. Miller of St. Paul, counsel, described the discussions prior to receivership and the procedure followed in effecting it.

DELAWARE & HUDSON.—*New Director.*—John W. Mettler, president of the Interwoven Stocking Company of East Millstone, N. J., has been elected to the board of managers succeeding Percy R. Pyne 2d, who resigned.

DULUTH, SOUTH SHORE & ATLANTIC.—*1925 Earnings.*—Annual report for 1925 shows a deficit of \$118,712. In 1924 there was a deficit of \$244,325. Selected items from the income statement follows:

	1925	1924
Gross revenue	\$5,808,935	\$5,905,360
Operating expenses	4,611,035	4,786,372
Net earnings	\$1,197,900	\$1,118,989
Income from other sources	162,955	196,217
Total income	\$1,360,855	\$1,315,205
Taxes, fixed charges, etc.....	1,479,567	1,559,530
Deficit	\$118,712	\$244,325

KANSAS, OKLAHOMA & GULF.—*Readjustment of Securities.*—The Interstate Commerce Commission has approved the issuance of securities in connection with the reorganization of the Missouri, Oklahoma & Gulf Railroad System, in receivership since June 6, 1924, under the new name of the Kansas, Oklahoma & Gulf Railway Company. In this connection it has approved the issuance of securities as follows:

1. (a) \$2,845,327 Series A, 6 per cent cumulative preferred stock to be issued in exchange for the present Series A bonds of the old company having fixed interest charges, (b) \$281,920 Series B, 6 per cent non-cumulative preferred stock to be issued in exchange for Series B bonds of the old company bearing contingent interest charges and (c) \$5,785,550 Series C, 6 per cent non-cumulative preferred to be issued in exchange for the Series C bonds of the old company bearing contingent interest charges. The company will reduce its present preferred stock (without letter designation) from the former amount of \$8,772,380 to but \$2,700,000, which will be entitled to 3 per cent dividends prior to any payments on the common stock. The common stock of the old company will be eliminated.

2. \$11,612,796 common stock to be issued from time to time for the purpose of converting par for par the various classes of preferred stock which latter the railroad reserves the right to redeem at par as a whole and in addition to which the holders of preferred stock will have the right to exchange for common stock at the end of any year.

3. \$4,000,000 first mortgage 6 per cent bonds, Series 1976,
(Continued on page 1354)

Annual Reports

The New York Central Railroad Company

To the Stockholders of

THE NEW YORK CENTRAL RAILROAD COMPANY

The Board of Directors herewith submits its report for the year ended December 31, 1925, with statements showing the income account and the financial condition of the company.

The year's business

During 1925 the company moved 111,223,698 tons of revenue freight, an increase over 1924 of 5,871,922 tons. Revenue passengers carried were 69,169,940, an increase over 1924 of 52,234. There was no congestion upon the company's lines during the year and traffic was moved expeditiously. The company's power and equipment were at all times adequate to handle the business offered.

Income Account for the Year

INCLUDING BOSTON AND ALBANY RAILROAD AND THE OHIO CENTRAL LINES

	Year ended Dec. 31, 1925 6,930.60 miles operated	Year ended Dec. 31, 1924 6,920.19 miles operated	Increase or Decrease 10.41 miles
OPERATING INCOME			
Railway operations	\$385,994,504.80	\$369,606,930.30	\$16,387,574.50
Railway operating expenses	290,440,958.36	279,970,163.07	10,470,795.29
NET REVENUE FROM RAILWAY OPERATIONS	\$95,553,546.44 (75.24)	\$89,636,767.23 (75.75)	\$5,916,779.21 —(0.51)
Percentage of expenses to			
Railway tax accruals	\$25,343,923.06	\$23,289,539.96	\$2,054,383.10
Uncollectible railway revenues	217,275.70	179,340.19	37,935.51
RAILWAY OPERATING INCOME	\$69,992,347.68	\$66,167,887.08	\$3,824,460.60
Equipment rents, net debit	\$5,079,852.17	\$4,602,563.79	\$477,288.38
Joint facility rents, net credit	3,008,054.29	3,069,751.04	—61,696.75
NET RAILWAY OPERATING INCOME	\$67,920,549.80	\$64,635,074.33	\$3,285,475.47
MISCELLANEOUS OPERATIONS			
Revenues	\$973,831.25	\$1,133,610.80	—\$159,779.55
Expenses and taxes	883,456.30	970,598.42	—87,142.12
MISCELLANEOUS OPERATING INCOME	\$90,374.95	\$163,012.38	—\$72,637.43
TOTAL OPERATING INCOME	\$68,010,924.75	\$64,798,086.71	\$3,212,838.04
NON-OPERATING INCOME			
Income from lease of road	\$116,288.84	\$107,058.93	\$9,229.91
Miscellaneous rent income	2,704,564.40	2,494,913.91	209,650.49
Miscellaneous non-operating physical property	550,109.64	863,946.53	—313,836.89
Separately operated properties—profit	1,148,287.87	1,297,992.66	—149,704.79
Dividend income	15,318,324.68	14,388,778.33	929,546.35
Income from funded securities and accounts	3,215,800.83	3,073,666.85	142,133.98
Income from unfunded securities and accounts	2,137,074.43	1,648,527.33	488,547.10
Income from sinking and other reserve funds	130,599.21	127,312.22	3,286.99
Miscellaneous income	98,045.40	121,020.09	—22,974.69
TOTAL NON-OPERATING INCOME	\$25,419,095.30	\$24,123,216.85	\$1,295,878.45
GROSS INCOME	\$93,430,020.05	\$88,921,303.56	\$4,508,716.49
DEDUCTIONS FROM GROSS INCOME			
Rent for leased roads	\$14,079,484.88	\$13,027,600.30	\$1,051,884.58
Miscellaneous rents	886,011.84	978,209.44	—92,197.60
Miscellaneous tax accruals	202,302.93	306,560.43	—104,257.50
Separately operated properties—loss	14,701.21	14,979.27	—278.06
Interest on funded debt	28,684,284.15	34,191,311.47	—5,507,027.32
Interest on unfunded debt	142,209.50	223,687.00	—81,477.50
Amortization of discount on funded debt	550,075.45	653,764.34	—103,688.89
Maintenance of investment organization	5,471.58	5,315.65	155.93
Miscellaneous income charges	238,254.94	269,475.74	—31,220.80
TOTAL DEDUCTIONS FROM GROSS INCOME	\$44,802,796.48	\$49,670,903.64	—\$4,868,107.16
NET INCOME	\$48,627,223.57	\$39,250,399.92	\$9,376,823.65
DISPOSITION OF NET INCOME			
Dividends declared (7 per cent each year)	\$26,732,833.39	\$20,728,835.39	\$6,003,998.00
Sinking and other reserve funds	125,465.17	122,103.53	3,361.64
Investment in physical property	652.47	.....	652.47
TOTAL APPROPRIATIONS OF INCOME	\$26,858,951.03	\$20,850,938.92	\$6,008,012.11
SURPLUS FOR THE YEAR CARRIED TO PROFIT AND LOSS	\$21,768,272.54	\$18,399,461.00	\$3,368,811.54

Profit and Loss account

BALANCE TO CREDIT OF PROFIT AND LOSS, DECEMBER 31, 1924	\$138,313,447.33
ADDITIONS:	
Surplus for the year 1925	\$21,768,272.54
Profit on property sold	66,479.72
Sundry adjustments (net, unrefundable overcharges and uncollectible bills)	821,664.99
	22,656,417.25
	\$160,969,864.58
DEDUCTIONS:	
Surplus appropriated for investment in physical property	\$157,594.04
Depreciation prior to July 1, 1907, on equipment retired during year	884,476.26
Loss on property retired	739,090.24
Debt discount extinguished through surplus	1,411,755.24
	3,192,915.78
BALANCE TO CREDIT OF PROFIT AND LOSS, DECEMBER 31, 1925	\$157,776,948.80

Revenues, tonnage and passengers

The total operating revenues were \$385,994,504.80, an increase of \$16,387,574.50.

Freight revenue was \$240,115,346.85, an increase of \$12,756,336.78.

The increase in tons handled was 5,871,922, of which coal, coke and iron ore account for 3,526,310, and clay, gravel, sand and stone for 1,065,853 tons. A falling off in the movement of anthracite coal due to strike conditions was more than offset by an increased tonnage of bituminous coal and coke.

Passenger revenue was \$96,759,666.50, an increase of \$779,341.75. Interline passengers carried decreased 32,725 and local passengers 1,136,192, while commutation passengers increased 1,221,151.

Mail revenue decreased \$167,026.95. This decrease was largely due to the falling off in traffic incident to the increase in postal rates on second and fourth class mail and to the taking over by the government of terminal service heretofore performed by the company.

Express revenue increased \$1,416,054.75, the result of an increase in traffic and an increase in rates effective March 1, 1925.

Other revenues from transportation increased \$1,071,124.26, the principal items being milk, switching and water transfers.

Incidental and joint facility revenues increased \$531,743.91, the principal item of increase being rents of buildings and other properties, \$506,760.51. Of this increase \$385,000 is due to the inclusion in this account for 1925 of certain rents which were placed in another account in 1924, and the balance represents, in the main, additional rent revenue from stores and booths at the Grand Central Terminal.

Operating expenses

Operating expenses were as follows:

Group	Amount	Increase
Maintenance of way and structures	\$52,783,990.34	\$6,333,951.51
Maintenance of equipment	81,218,765.30	2,000,973.66
Traffic expenses	4,580,401.15	307,894.07
Transportation expenses	134,274,255.65	*477,353.65
Miscellaneous operations	5,230,612.71	440,349.02
General expenses	12,556,558.37	1,790,155.51
Transportation for investment—credit	203,625.16	74,825.17
Total	\$290,440,958.36	\$10,470,795.29

*Decrease

Expense for maintenance of way and structures increased \$6,333,951.51. A full year's maintenance of the Hudson River Connecting Railroad and its extensive yards at Selkirk, New York, and charges for property retired at other points incident to the construction of these facilities contributed largely to this increase. Other items of increase were attributable to enlarged facilities: maintenance charges in connection with the electrification of that part of the Putnam Division between Sedgwick Avenue, New York City and Yonkers; increased tonnage of rail laid and higher prices for ties; charges account grade crossing elimination, track changes and station improvements; and removal of snow after the heavy storms early in 1925.

Expense for maintenance of equipment increased \$2,000,973.66. Heavy work on a larger number of locomotives and the shopping of more freight cars caused a substantial increase in the charges to the repair accounts. Passenger cars received less extensive repairs than in 1924 and there was a marked decrease in charges for freight car retirements. Depreciation upon equipment increased \$1,250,366.92 as the result of the larger investment.

Transportation expenses decreased \$477,353.65. In charges for fuel there was a decrease of \$2,291,260.74. There was an in-

[ADVERTISEMENT]

crease of \$1,813,907.09 in the other transportation expenses largely attributable to the additional traffic handled.

General expenses increased \$1,790,155.51. This increase was almost entirely due to the charging to the year's expenses of the total amount estimated to be required for the payment of allowances to employees retired under the pension plan in 1925 during the continuance of such allowances, such charges being accrued in a pension reserve which at the end of the year amounted to \$1,765,117.42.

Railway tax accruals

Railway tax accruals were \$25,343,923.06, an increase of \$2,054,383.10. These were as follows:

Federal	\$5,911,889.70	Increase	\$1,476,338.69
State (including county, municipal, etc.)	19,420,925.56	Increase	670,642.50
Canadian	11,107.80	Decrease	92,598.09

The increase in federal taxes is in those on income and on capital stock due to the larger net income earned in 1925 and to additional capital stock issued.

In 1924 there were customs duties on equipment crossing the Canadian border. There were no charges of this character in 1925, which accounts for the decrease in Canadian taxes. The increases in State taxes are attributable, in part, to new property, but in many cases to higher assessments and rates. The largest increases were in New York and New Jersey, those in the latter State being almost entirely the result of higher assessments.

Non-operating income

Miscellaneous rent income increased \$209,650.49. This is attributable to revenue from new buildings in the Grand Central Terminal zone and to additional or increased rentals at many other points.

Income from miscellaneous non-operating physical property decreased \$313,836.89, mainly due to the reclassification of certain properties under which income from the same which was included in this account in 1924 was carried to another account in 1925.

Profit from separately operated properties decreased \$149,704.79 as the result of the smaller amount received account of operation of the Pittsburgh, McKeesport and Youghiogeny Railroad.

Dividend income increased \$929,546.35 notwithstanding the inclusion in 1924 of a liquidation dividend of \$828,321.87 received upon dissolution of the Western Transit Company. There was increased dividend income from The Michigan Central Railroad Company and The Cleveland, Cincinnati, Chicago and St. Louis Railway Company amounting to \$1,586,168 and a net increase of \$171,700.22 in dividends received from numerous other companies.

Income from funded securities and accounts increased \$142,133.98 largely due to interest on United States Treasury Bonds purchased during the year. Income from unfunded securities and accounts increased \$488,547.10, the result of interest on larger bank balances on deposit and on advances made during the year.

Deductions from gross income

Rent for leased roads increased \$1,051,884.58, largely as the result of the lease of the Hudson River Connecting Railroad. The rental under that lease consists of a dividend of 6 per cent upon the capital stock of the lessor, all of which is owned by this company, and interest upon advances made to the lessor by this company on capital account.

Interest on funded debt decreased \$5,507,027.32. This was almost entirely due to the conversion into stock of the company's six per cent debentures of 1915, as set forth on page 9 of this report.

Net income before dividends and other appropriations

The net income of the company was \$48,627,223.57, an increase of \$9,376,823.65, and amounted to 12.69 per cent upon the capital stock outstanding at the end of the year.

Dividends

Date declared	Date payable	Rate per cent	Amount
March 11, 1925	May 1, 1925	1 3/4	\$6,611,982.91
June 10, 1925	August 1, 1925	1 3/4	6,706,948.41
September 9, 1925	November 2, 1925	1 3/4	6,706,950.16
December 9, 1925	February 1, 1926	1 3/4	6,706,951.91
Total			26,732,833.39

Surplus

After charges for dividends aggregating \$26,732,833.39 and other appropriations amounting to \$126,117.64, there remained a surplus for the year of \$21,768,272.54 which was carried to the credit of profit and loss. At the end of the year the total corporate surplus was \$159,892,920.66.

Property investment accounts

The changes in the property investment accounts for the year, as shown in detail in this report, were:

Road, increase	\$12,226,472.11
Equipment, increase	8,111,331.17
Miscellaneous physical property, decrease	1,922,991.11
Improvements on leased railway property, increase	4,798,172.49

A net total increase of..... \$23,212,984.66

Increase of capital stock

The capital stock of the company in the hands of the public on December 31, 1924, was \$304,836,835. This amount was increased during 1925 to the extent of \$78,421,400 by the issue of 762,400 shares, at 105, in exchange for \$76,241,500 of its 20-year 6 per cent convertible debentures of 1915 and \$3,810,500 in cash, and by the issue and sale of 21,814 additional shares (including 2,520 shares theretofore held in its treasury), making the amount in the hands of the public on December 31, 1925, \$383,258,235.

Employees' subscription to capital stock

On January 7, 1925, the company offered to those in its employ or in the employ of any of its controlled companies the opportunity to subscribe for a limited number of shares of the capital stock of the company at \$110 per share, to be paid for in monthly installments by deductions from the payrolls; each employee being entitled to subscribe for one share for each \$200 of his annual rate of pay, with a limit of 20 shares. Under this offering, 41,570 employees subscribed for an aggregate of 96,900 shares of stock. Upon these subscriptions, which exceeded the number of shares available, 68,747 shares were allotted.

On November 2, 1925, the company made a supplementary offering of its stock, at \$115 per share, to enable those who had subscribed under the offering of January 7th for a greater number of shares than had been allotted to them to subscribe for additional shares up to the amount by which their former subscriptions had exceeded the number of shares allotted thereon. Under this offering, 14,864 shares were subscribed for and allotted.

Only a few of the employees who subscribed for stock under the above offerings are included in the statement of stockholders following, since the subscribers do not become stockholders of record until the stock has been paid for in full.

Stockholders

The following table shows the growth in the number of stockholders from 1915:

Date	Total Number	Average holding	In United States Number	Average holding	Abroad Number	Average holding
December 31, 1915	25,042	100	22,270	104	2,772	64
December 31, 1916	22,532	111	21,836	112	696	57
December 31, 1917	27,102	92	26,771	92 1/2	331	69
December 31, 1918	28,693	87	28,395	87	298	69
December 31, 1919	30,445	82	30,180	82	265	67
December 31, 1920	32,396	77	32,173	77	223	64
December 31, 1921	34,328	73	33,824	73	504	70
December 31, 1922	34,319	78	33,843	78	476	70
December 31, 1923	34,946	77	34,502	77	444	70
December 31, 1924	36,282	84	35,856	84	426	66
December 31, 1925	40,660	94	40,238	94 1/2	422	64

Changes in funded debt

The changes in the funded debt of the company, in detail, were as follows:

The amount on December 31, 1924.....\$776,916,391.32 has been increased as follows:

N. Y. C. Lines Equipment Trust 4 1/2 per cent certificates of May 15, 1925.....	3,750,000.00
	\$780,666,391.32

and has been reduced as follows:

N. Y. C. R. R. Co. 20-Year 6 per cent convertible debentures	\$76,241,500.00
Less \$709,000 reported in 1924 as purchased by company; resold in 1925 and converted..	709,000.00
	\$75,532,500.00

Payments falling due during the year and on January 1, 1926, on the company's liability for principal installments under equipment trust agreements as follows:	
M D T Co Trust of 1911, July 1, 1925	75,000 00
N. Y. C. Lines Trust of 1912, January 1, 1926	688,398.90
N. Y. C. and H. R. R. R. Co (Boston and Albany) Trust of 1912, October 1, 1925..	500,000.00
N Y C Lines Trust of 1913, January 1, 1926	742,117 61
N Y C R R Co Trust of 1917, January 1, 1926	1,117,000 00
Trust No. 43 of January 15, 1920, January 15, 1925	922,700 00
N Y C R R Co Trust of 1920, April 15, 1925	1,153,167 33
N Y C Lines Trust of 1922, June 1, 1925..	572,000 00

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N Y C Lines 4½ per cent Trust of 1922, September 1, 1925	569,000 00	
N Y C Lines Trust of June 1, 1923, June 1, 1925	462,000 00	
N Y C Lines Trust of 1924, June 1, 1925	983,000 00	
N Y C Lines 4½ per cent Trust of 1924, September 15, 1925	848,000.00	84,164,883.84
leaving the funded debt on December 31, 1925. a net decrease of \$80,414,883.84.		\$696,501,507.48

Changes in the company's capital structure

The following table shows changes in the ratio of capital stock to total capitalization since the organization of the company:

Date	Capital stock	Funded debt	Total capitalization	Ratio of capital stock to total capitalization
Jan. 1, 1915	\$249,590,460	\$591,446,508	\$841,036,968	29.68%
Dec. 31, 1915	249,590,460	681,240,153	930,830,613	26.81%
Dec. 31, 1916	249,590,460	672,929,007	922,519,467	27.06%
Dec. 31, 1917	249,849,360	690,665,086	940,514,446	26.57%
Dec. 31, 1918	249,849,360	688,297,201	938,146,561	26.63%
Dec. 31, 1919	249,849,360	671,666,782	921,516,142	27.11%
Dec. 31, 1920	249,849,360	748,366,477	998,215,837	25.03%
Dec. 31, 1921	249,849,360	739,592,969	989,442,329	25.25%
Dec. 31, 1922	268,233,920	762,956,287	1,031,190,207	26.01%
Dec. 31, 1923	268,323,375	769,979,489	1,038,302,864	25.84%
Dec. 31, 1924	304,836,835	776,916,391	1,081,753,226	28.18%
Dec. 31, 1925	383,258,235	696,501,507	1,079,759,742	35.49%

Termination of New York Central Lines Equipment Trust of 1910

The New York Central Lines Equipment Trust of 1910 having expired on January 1, 1925, the title to the equipment was transferred by the Trustee to the several railroad companies, parties to the trust, in proportion to the amount of the cost thereof paid by each company, respectively. This company's share of the equipment so transferred from trust to railroad owned consisted of 113 locomotives, 104 passenger-train cars, 17,258 freight-train cars and 246 work train cars.

New York Central Lines Equipment Trust of 1925

This trust was established by agreement dated May 15, 1925, to which The New York Central Railroad Company, The Michigan Central Railroad Company and The Cleveland, Cincinnati, Chicago and St. Louis Railway Company are parties. Under the trust a total of \$22,500,000 of 4½ per cent equipment trust certificates are issuable of which there were issued during the year \$10,530,000, maturing in equal annual installments of \$702,000 in the years 1926-1940, inclusive, and representing approximately 75 per cent of the cost of equipment leased by the Trustee to the railroad companies. The equipment allotted to this company under the trust, costing approximately \$5,094,059.22, consists of 1,000 box cars, 200 refrigerator cars, 29 motor passenger cars, 15 baggage cars, 10 dining cars and 10 coaches. The certificates issued are prorated among the railroad companies in proportion to the cost of the equipment allotted to each, this company's share being \$3,750,000.

Opening of north-bound driveway around easterly side of Grand Central Terminal

On December 28, 1925, the Controller of the City of New York signed the plans and profiles and the agreements between the City and the company. The plans and profiles have been exchanged and filed in accordance with the statute. The agreement between the City and the company, the deeds from the New York Central and New York and Harlem companies conveying to the City the easements required for the new driveways and also for the extension of Vanderbilt Avenue along the surface between 45th and 47th streets, and the deed from the City to the railroad companies of the abandoned portion of Park Avenue between 45th and 46th streets have been executed and were delivered December 31, 1925. There is also an agreement between the City and the railroad company for the widening of Park Avenue roadways between 46th and 57th streets. The work of construction is to be performed by the company at the expense of the City. Construction work will be commenced as soon as practicable.

The plan also contemplates the erection of a building between 45th Street and 46th Street which will extend from the easterly line of Vanderbilt Avenue to the westerly line of former Depew Place extended, spanning the new driveways and that part of Park Avenue to be abandoned.

West Side Improvements—New York City

The 1924 report contained a statement showing what the company had done under the Acts of the Legislature of the State of New York passed in 1923 and 1924 making it unlawful to operate any railroad within the greater New York and cities adjoining after January 1, 1926, with any motive power except electricity.

At the time that report was printed the Transit Commission,

on the company's application for elimination of grade crossings, had taken action by making an order for elimination of the grade crossings at or near Manhattanville and also at Dyckman Street, such order, however, not being effective unless and until the Legislature should make the necessary appropriation for the State's share of the expense. At that time it was not thought there was any State money available but on or about September 1, 1925, money for a portion of the State's share being found available the order was made effective for the elimination of nine grade crossings at or near Manhattanville, plans therefor were approved and that work is being carried out. The Transit Commission also made an order on May 19, 1925, directing the elimination of the grade crossing at Moshulu Avenue on the main line of the Putnam Division.

On the company's application to the Public Service Commission to prescribe the method of electrification as required by the Act that Commission has made several orders:

On February 20, 1925, it approved plans for the electrification of the Port Morris Branch;

On April 30, 1925, it approved plans for electrifying the Yonkers Branch;

On August 8, 1925, it approved the Diesel electric locomotive for the Putnam Division main line;

On November 12, 1925, it approved plans for electrifying with 3rd rail as far south as 60th Street yard and the Diesel electric locomotive south of 60th Street yard.

At the time of printing this report the Yonkers (Getty Square) Branch has been electrified and is in operation; the electrification of the Port Morris Branch is very nearly completed; and in the yards and sidings on the Hudson and Harlem Electric Divisions electrification is well under way. Seven freight switching electric locomotives have been ordered and delivery is expected about April 1, 1926. Two road freight electric locomotives have been ordered and delivery is expected about May 1, 1926.

Inasmuch as under the Acts of the Legislature the operation by steam locomotives on and after January 1, 1926, would be unlawful and might subject the company to fines and penalties the company commenced an action in the United States District Court for the Southern District of New York on December 28, 1925, against the officers in any way charged with the duty of enforcing such a law, seeking to restrain them from taking any action with respect thereto and asking a temporary stay. Such stay was granted and the return day for argument on the merits was fixed as of January 8, 1926. By consent of all parties the date of hearing was postponed until February 26th.

It is hoped that the Legislature will enact appropriate legislation to enable the necessary changes to be made in proper order and on some reasonable basis.

The Cleveland Union Terminals Company

The Cleveland Union Terminals Company issued and sold during the year an additional \$5,000,000 of its fifty-year 5 per cent first mortgage bonds of series B, which were jointly guaranteed by this company and the other proprietors of the Terminals Company under the guaranty agreement dated July 17, 1923.

During the year additional ordinances required for the construction of the Terminal have been passed by the Council of the City of Cleveland. Progress has been made in the acquisition of land and in the excavation for the station area. The construction of foundations, retaining walls and bridges is proceeding.

Pensions

During the year 347 employees were retired and pensioned; 196 at the age of 70, 148 for disability, and 3 voluntarily on service pension. There were 2,498 pensioners at the close of the year.

The total amount paid in pensions for the year was \$1,162,847.51. The balance in the reserve set up to provide for payments upon pensions granted in 1925 was, at the end of the year, \$1,765,117.42.

Effective September 1, 1925, an amendment to the pension rules permits any employee voluntarily to retire who has had at least 40 years of continuous service and is not less than 65 years of age.

Changes in organization

The Board records with deep regret the death of Milton S. Barger, General Treasurer, on March 5, 1925.

The Board records the following appointments:

Harry G. Snelling, General Treasurer, April 1, 1925;

Rush N. Harry, an Assistant General Treasurer, April 1, 1925;

Sylvester S. Bliss, an Assistant Treasurer, November 1, 1925.

The Board wishes to express its appreciation of the loyal and efficient service of the officers and employees of the company during the year.

For the Board of Directors,

P. E. CROWLEY,
President.

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Missouri-Kansas-Texas Railroad Company

and Controlled Companies

Annual Report for the Year Ended December 31, 1925

St. LOUIS, Mo., April 19, 1926.

To the Stockholders:

The Board of Directors submit herewith report of the operations and affairs for the year ended December 31, 1925.

A summary of results of operation for the year compared with the year 1924 is as follows:

Operating Revenues were.....	\$57,492,913.54
(Increase, \$183,568.51 or 3/10%)	
Operating Expenses were.....	\$39,618,128.36
(Decrease, \$113,906.33 or 3/10%)	
Net Operating Revenue was.....	\$17,874,785.18
(Increase, \$297,474.84 or 2%)	
Taxes were.....	\$2,867,589.28
(Decrease, \$348,097.37 or 11%)	
Operating Income, Taxes Deducted, was.....	\$15,007,195.90
(Increase, \$645,572.21 or 4%)	
Miscellaneous Income was.....	\$255,578.44
(Increase, \$216.69 or 8/100%)	
Rentals and Other Payments were.....	\$15,262,774.34
(Increase, \$381,815.68 or 24%)	
Income for the Year Available for Interest was.....	\$13,288,451.56
(Increase, \$263,973.22 or 2%)	
Fixed Interest Charges for year were.....	\$4,432,445.86
(Decrease, \$293,509.42 or 6%)	
Balance available for Interest on Adjustment Bonds was.....	\$8,856,005.70
Interest on Adjustment Bonds was.....	\$2,738,386.71
(Decrease, \$51,698.64 or 2%)	
Balance (Increase \$609,181.28 or 11%)	\$6,117,618.99

Financial

On March 2, 1925 \$4,750,000.00 Secured Gold Notes were redeemed and the \$6,100,000.00 principal amount of Prior Lien Mortgage 6% Gold Bonds Series "C," pledged to secure the notes, were delivered to the Company and placed in its treasury assets.

Adjustment Mortgage 5 per cent. Series "A" Bonds amounting to \$1,603,000.00 were converted, during the year, into shares of the Preferred Stock, Series "A" with appropriate adjustment of interest and dividend. The surrendered bonds and coupons were delivered to the Corporate Trustee for cancellation.

Underlying bonds and equipment obligations left undisturbed in the reorganization, amounting to \$185,100.00, were paid and retired during the year and \$66,000.00 were exchanged for Prior Lien Bonds.

Preferred Stock, Series "A" (7% cumulative after January 1, 1928), amounting to \$48,100.00, and Common Stock (no par value), amounting to 629 shares, have been issued during the year by the Reorganization Managers for the purposes of the reorganization.

The properties of The Boonville Railroad Bridge Company and Missouri, Kansas & Texas Terminal Company of St. Louis were, during the year, purchased pursuant to the resolution adopted by the stockholders at their annual meeting held April 11, 1924. All of the capital stock of these Companies was owned by Missouri-Kansas-Texas Railroad Company.

Dividends amounting to \$1,281,501.58 were declared during the year, being at the rate of 5% per annum on the Preferred Stock, Series "A" outstanding in the hands of the public.

Operation

The mileage operated on December 31, 1925, was 3,188.54 compared with 3,188.45 on December 31, 1924. The increase of .09 miles was occasioned by extending the main line at Forgan, Oklahoma, to connect with the Beaver, Meade & Englewood Railroad Company.

Train service, both freight and passenger, has been so maintained throughout the year as to effectively meet competition. Compared with 1924, freight revenues increased \$1,445,938. A greater increase in revenue would have been enjoyed had not the productive sections of Texas suffered severe drought, which resulted in short cotton and grain crops, with consequent reduced purchasing power in the affected area. There was also a decrease in export grain movement from primary markets. Passenger train revenue decreased \$1,132,011, due to constant increase in bus and automobile competition as hard surfaced roads are developed in the Southwest. The loss, while general, is principally in short-haul traffic.

Transportation expenses were affected materially by increased fuel prices, which became effective early in 1925. The increased cost in this respect was largely offset by intensive campaigns to effect savings in the use of labor and materials, and by having satisfactory power and other improved operating facilities to handle the business. Transportation ratio for the year 1925 was 30.6% compared with ratio of 30.3% in 1924. The operating ratio was 68.91% in 1925 and 69.33% in 1924.

The property, including roadway, structures and rolling stock has been maintained in good condition.

A cordial relationship between the management and employees has existed throughout the year. The officers and employees are especially commended for their faithful and efficient service.

C. E. Schaff,
President.

Missouri-Kansas-Texas Lines Income Account, Year Ended December 31, 1925, Compared with Year Ended December 31, 1924

	1925 3,188.54	1924 3,193.14	Increase or Decrease —4.60
Average Mileage Operated..			
OPERATING REVENUE:			
Freight	\$43,777,643.01	\$42,331,704.74	\$1,445,938.27
Passenger	9,325,059.52	10,457,070.86	—1,132,011.34
Mail	1,143,052.49	1,189,965.90	—46,913.41
Express	1,758,952.12	1,827,782.55	—68,830.43
Miscellaneous	705,652.37	665,305.33	40,347.04
Incidental	729,568.59	791,351.94	—61,783.35
Joint Facility	52,985.44	46,163.71	6,821.73
Total Operating Revenue..	\$57,492,913.54	\$57,309,345.03	\$183,568.51
OPERATING EXPENSES:			
Maintenance of Way and Structures	\$7,404,573.56	\$7,563,137.47	—\$158,563.91
Maintenance of Equipment..	11,422,782.90	11,517,474.98	—94,692.08
Traffic Expenses	1,177,621.43	1,138,962.06	38,659.37
Transportation Expenses ..	17,592,364.34	17,363,774.08	228,590.26
Miscellaneous Operations....	372,178.73	381,099.49	—8,920.76
General Expenses	1,886,171.37	1,919,776.74	—33,605.37
Transportation for Investment—Cr.	237,563.97	152,190.13	—85,373.84
Total Operating Expenses..	\$39,618,128.36	\$39,732,034.69	—\$113,906.33
Net Operating Revenue....	\$17,874,785.18	\$17,577,310.34	\$297,474.84
RAILWAY TAX ACCRUALS....	\$2,867,589.28	\$3,215,686.65	—\$348,097.37
UNCOLLECTIBLE RAILWAY REVENUES	25,424.04	31,403.55	—5,979.51
Total	\$2,893,013.32	\$3,247,090.20	—\$354,076.88
Total Operating Income... \$14,981,771.86		\$14,330,220.14	\$651,551.72
NON-OPERATING INCOME:			
Rent from Locomotives....	\$74,744.54	\$62,917.76	\$11,826.78
Rent from Passenger Train Cars	137,921.39	149,698.44	—11,777.05
Rent from Work Equipment..	30,980.76	40,459.62	—9,478.86
Joint Facility Rent Income..	153,301.56	140,931.18	12,370.38
Income from Lease of Road	140,102.20	138,230.81	1,871.39
Miscellaneous Rent Income..	133,930.18	99,717.69	34,212.49
Miscellaneous Non-Operating Physical Property	5,175.47	10,162.47	4,987.00
Dividend Income .....	.....	700.00	—700.00
Income from Funded Securities	131,797.36	130,782.27	1,015.09
Income from Unfunded Securities and Accounts....	119,465.46	121,349.78	—1,884.32
Miscellaneous Income	4,315.62	2,529.70	1,785.92
Total Non-Operating Income	\$921,383.60	\$877,154.78	\$44,228.82
Gross Income	\$15,903,155.46	\$15,207,374.92	\$695,780.54
DEDUCTIONS FROM GROSS INCOME:			
Hire of Freight Cars—Debit Balance	\$1,534,777.83	\$1,069,243.38	\$465,534.45
Rent for Locomotives.....	40,092.72	30,501.11	9,591.61
Rent for Passenger Train Cars	68,269.36	75,625.41	—7,356.05
Rent for Work Equipment..	77,184.57	193,518.14	—116,333.57
Joint Facility Rents.....	832,771.37	767,841.52	64,929.85
Rent for Leased Roads....	7,661.40	7,661.40	.....
Miscellaneous Rents	1,948.53	2,244.68	—296.15
Miscellaneous Tax Accruals	8,651.89	6,072.93	2,618.96
Interest on Unfunded Debt.	42,806.89	28,637.38	14,169.51
Miscellaneous Income Charges	499.34	1,550.60	—1,051.29
Total Deductions from Gross Income	\$2,614,703.90	\$2,182,896.58	\$431,807.32
Balance Available for Interest	\$13,288,451.56	\$13,024,478.34	\$263,973.22
Fixed Interest Charges....	4,432,445.86	4,725,955.28	—293,509.42
Balance Available for Interest on Adjustment Bonds	\$8,856,005.70	\$8,298,523.06	\$557,482.64
Interest on Adjustment Bonds	2,738,386.71	2,790,085.35	—51,698.64
Balance	\$6,117,618.99	\$5,508,437.71	\$609,181.28

Italics denote Debit.

[ADVERTISEMENT]

Missouri-Kansas-Texas Lines—Consolidated General Balance Sheet

ASSETS	December 31, 1925	December 31, 1924	Increase or Decrease	LIABILITIES	December 31, 1925	December 31, 1924	Increase or Decrease
INVESTMENTS:				STOCK:			
Investment in Road and Equipment:				CAPITAL STOCK:			
Road	\$227,291,841.22	\$224,773,231.92	\$2,518,609.30	Preferred: (Par value \$100 per share.)			
Equipment	51,634,107.51	48,656,338.06	2,977,769.45	In hands of Public.....	\$25,917,000.00	\$24,265,900.00	\$1,651,100.00
	\$278,925,948.73	\$273,429,569.98	\$5,496,378.75	In hands of Reorganization Managers for purposes of Reorganization	5,686,000.00	5,734,100.00	—48,100.00
Improvements on Leased Railway Property	8,552.87	8,552.87	.....	Common: (No par value. See Note.)			
Sinking Funds	598.82	588.85	9.99	In hands of Public.....	66,544,589.28	66,492,747.16	51,842.18
Deposits in Lieu of Mortgaged Property Sold.....	192.66	75,187.94	—74,995.28	In hands of Reorganization Managers for purposes of Reorganization	15,875,410.72	15,927,252.90	—51,842.18
Miscellaneous Physical Property	910,255.59	556,048.93	354,206.66	TOTAL STOCK	\$114,023,000.00	\$112,420,000.00	\$1,603,000.00
Investments in Affiliated Companies—Pledged.....	527,000.00	529,001.00	—2,001.00	LONG TERM DEBT:			
Investments in Affiliated Companies—Unpledged	132,364.35	61,007.17	71,357.18	Mortgage Bonds:			
United States Government Securities	3,134,156.25	5,034,156.25	—1,900,000.00	In hands of Public.....	\$92,551,749.30	\$92,652,749.30	—\$101,000.00
Other Securities	614,462.42	667,697.09	—53,234.67	In hands of Reorganization Managers for purposes of Reorganization	9,807,349.70	9,622,249.70	185,100.00
TOTAL INVESTMENTS	\$284,253,531.69	\$280,361,810.06	\$3,891,721.63	Equipment Trust Obligations	841,000.00	925,100.00	—84,100.00
CURRENT ASSETS:				Collateral Trust Bonds .....	.....	4,750,000.00	—4,750,000.00
Cash	\$3,094,777.91	\$3,356,936.44	—\$262,158.53	Income Mortgage Bonds:			
Time Drafts and Deposits..	3,000,000.00	2,195,241.59	804,758.41	In hands of Public.....	54,206,663.74	55,809,663.74	—1,603,000.00
Special Deposits	8,151.10	9,643.24	—1,492.14	In hands of Reorganization Managers for purposes of Reorganization	1,690,336.26	1,690,336.26	.....
Loans and Bills Receivable	8,787.41	10,152.81	—1,365.40	TOTAL LONG TERM DEBT.....	\$159,097,099.00	\$165,450,099.00	—\$6,353,000.00
Traffic and Car Service Balances Receivable	603,860.57	709,202.56	—105,341.99	CURRENT LIABILITIES:			
Net Balance Receivable from Agents and Conductors....	1,311,192.28	1,471,567.01	—160,374.73	Traffic and Car Service Balances Payable	\$1,571,757.89	\$1,431,309.96	\$140,447.93
Miscellaneous Accounts Receivable	1,330,393.01	1,398,860.38	—68,467.37	Audited Accounts and Wages Payable	5,025,690.89	4,216,274.89	809,416.00
Material and Supplies.....	6,278,584.63	6,353,075.00	—74,490.37	Miscellaneous Accounts Payable	173,648.55	182,308.92	—8,660.37
Interest and Dividends Receivable	41,953.13	58,953.12	—16,999.99	Interest Matured Unpaid..	1,849,099.92	1,924,012.71	—74,912.79
Rents Receivable .....	.....	55.00	—55.00	Dividends Matured Unpaid..	7,051.00	.....	7,051.00
Other Current Assets.....	71,340.47	147,015.87	—75,675.40	Funded Debt Matured Unpaid .....	.....	1,000.00	—1,000.00
TOTAL CURRENT ASSETS	\$15,749,040.51	\$15,710,703.02	\$38,337.49	Unmatured Dividends Declared	325,632.50	306,261.25	19,371.25
DEFERRED ASSETS:				Unmatured Interest Accrued	1,487,465.74	1,626,556.00	—139,090.26
Working Fund Advances....	\$22,237.89	\$80,377.16	—\$58,139.27	Unmatured Rents Accrued..	132,227.10	90,292.09	41,935.01
Other Deferred Assets.....	1,002.00	3,001.00	—1,999.00	Other Current Liabilities....	284,311.59	466,543.02	—182,231.43
TOTAL DEFERRED ASSETS	\$23,239.89	\$83,378.16	—\$60,138.27	TOTAL CURRENT LIABILITIES	\$10,856,885.18	\$10,244,558.84	\$612,326.34
UNADJUSTED DEBITS:				DEFERRED LIABILITIES:			
Rents and Insurance Premiums Paid in Advance....	\$80,237.47	\$90,743.66	—\$10,506.19	Other Deferred Liabilities...	\$253,489.42	\$206,228.84	\$47,260.58
Other Unadjusted Debits....	310,721.12	409,442.46	—98,721.34	UNADJUSTED CREDITS:			
Reorganization Suspense	3,280,539.76	5,084,232.64	—1,803,692.88	Tax Liability	\$2,082,925.58	\$2,179,246.48	—\$96,320.90
TOTAL UNADJUSTED DEBITS	\$3,671,498.35	\$5,584,418.76	—\$1,912,920.41	Insurance and Casualty Reserves	379.39	279.30	100.09
TOTAL	\$303,697,310.44	\$301,740,310.00	\$1,957,000.44	Accrued Depreciation—Equipment	4,045,636.24	2,463,600.00	1,582,036.24
The following Securities not included in Balance Sheet Accounts:				Other Unadjusted Credits...	1,134,898.69	1,339,246.94	—204,348.25
Securities Issued or Assumed—Unpledged	\$6,100,000.00	.....	.....	TOTAL UNADJUSTED CREDITS	\$7,263,839.90	\$5,982,372.72	\$1,281,467.18
Securities Issued or Assumed—Pledged .....	.....	\$6,100,000.00	.....	CORPORATE SURPLUS:			
NOTE—Intercompany Assets and Liabilities are excluded.				Additions to Property through Income and Surplus.....	\$31,744.95	\$27,260.02	\$4,484.93
NOTE:				Profit and Loss—Balance...	12,171,251.99	7,409,790.58	4,761,461.41
There were 807,384 shares Common Stock outstanding in hands of the public on December 31, 1925, an increase of 629 shares.				TOTAL CORPORATE SURPLUS	\$12,202,996.94	\$7,437,050.60	\$4,765,946.34
There were also 192,616 shares Common Stock, on December 31, 1925, issued and held subject to order of the Reorganization Managers under the Plan and Agreement for Reorganization of Missouri, Kansas & Texas Railway Company, dated November 1, 1921.				TOTAL	\$303,697,310.44	\$301,740,310.00	\$1,957,000.44
Securities held by Reorganization Managers under the Plan and Agreement for Reorganization of Missouri, Kansas & Texas Railway Company dated November 1, 1921, will be accounted for and any unused balance returned to the Company.				The following Capital Liabilities not included in Balance Sheet Accounts:			

Missouri-Kansas-Texas Lines Operating Revenues and Expenses for Ten Years Ended Dec. 31, 1925

Revenues								
	Average Mileage Operated	Freight	Passenger	Mail	Express	Miscellaneous	Other	Total
1916	3,865.02	\$24,795,719.61	\$9,215,627.16	\$783,675.57	\$1,055,446.23	\$331,073.57	\$552,140.14	\$36,733,682.28
1917	3,866.31	29,027,903.37	11,160,922.06	796,848.22	1,239,934.08	426,765.48	691,777.18	43,344,150.39
1918	3,860.88	35,754,940.45	14,715,178.42	765,503.13	1,623,472.00	489,494.21	790,210.76	54,138,798.97
1919	3,838.66	41,283,105.84	16,709,710.51	715,238.82	1,609,690.09	416,308.03	1,091,323.00	61,825,376.29
1920	3,793.42	47,363,850.89	19,378,120.16	2,286,746.68	1,899,966.98	794,557.53	1,191,494.82	72,914,737.06
1921	3,783.69	43,782,692.09	13,904,679.97	1,356,041.38	2,102,426.33	779,656.03	1,095,479.65	63,020,975.45
1922	3,737.46	39,198,400.88	10,958,411.71	1,241,950.01	2,130,755.79	620,380.79	885,802.71	55,035,701.89
1923	3,359.76	39,791,214.67	11,295,456.27	1,221,101.46	2,181,233.24	637,146.76	861,765.68	55,987,918.08
1924	3,193.14	42,331,704.74	10,457,070.86	1,189,965.90	1,827,782.55	665,305.33	837,515.65	57,309,345.03
1925	3,188.54	43,777,643.01	9,325,059.52	1,143,052.49	1,758,952.12	705,652.37	782,554.03	57,492,913.54
Expenses								
	Maintenance of Way and Structures	Maintenance of Equipment	Traffic	Transportation Expenses	General and Other	Total	Net Revenue	
1916	\$7,635,694.93	\$7,273,803.80	\$725,564.02	\$12,400,520.85	\$1,404,117.14	\$29,439,700.74	\$7,293,981.54	
1917	6,353,665.13	8,737,922.08	786,979.55	15,672,561.22	1,594,982.61	33,146,110.59	10,198,039.80	
1918	9,539,254.15	12,630,284.39	582,149.43	22,377,510.36	2,199,835.07	47,329,033.40	6,809,765.57	
1919	12,124,064.16	14,814,834.52	657,119.63	26,876,430.00	2,514,447.24	56,986,895.55	4,838,480.74	
1920	16,422,652.00	17,378,345.36	978,596.39	32,014,151.75	3,087,133.40	69,880,878.90	3,033,858.16	
1921	9,835,638.33	13,803,427.26	1,064,545.36	22,866,804.76	2,485,368.66	50,055,784.31	12,965,191.14	
1922	7,237,276.60	10,548,094.49	1,041,435.68	18,780,007.03	2,076,887.24	39,683,701.04	15,352,000.85	
1923	7,393,307.28	14,636,724.26	1,151,353.02	18,380,268.53	2,066,665.86	43,628,318.95	12,359,599.13	
1924	7,563,137.47	11,517,474.98	1,138,962.06	17,363,774.08	2,148,686.10	39,732,034.69	17,577,310.34	
1925	7,404,573.56	11,422,782.90	1,177,621.43	17,592,364.34	2,020,786.13	39,618,128.36	17,874,785.18	

Twenty-Ninth Annual Report of the Northern Pacific Railway Company

For the Year Ending December 31, 1925

Office of the
NORTHERN PACIFIC RAILWAY COMPANY

St. Paul, Minnesota, April 29, 1926.

To the Stockholders of the

Northern Pacific Railway Company:

The following, being the twenty-ninth annual report, shows the result of the operation of your property for the year ending December 31, 1925.

Income Account

	1925	1924	Increase— Decrease—D
Average mileage operated..	6,693.63	6,679.94	I 13.69
Operating Income.			
Operating revenues.....	\$97,864,554.73	\$95,292,403.75	I \$2,572,150.98
Operating expenses.....	69,972,476.31	70,533,064.17	D 560,587.86
Net operating revenue....	27,892,078.42	24,759,339.58	I 3,132,738.84
Railway tax accruals.....	9,346,895.84	8,546,757.71	I 800,138.13
Uncollectible railway revenues	25,374.45	16,396.34	I 8,978.11
Railway operating income.	18,519,808.13	16,196,185.53	I 2,323,622.60
Equipment rents—net.....	1,855,789.59	2,130,762.83	D 274,973.24
Joint facility rent—net.....	1,851,721.62	1,534,128.42	I 317,593.20
Net railway operating income	22,227,319.34	19,861,076.78	I 2,366,242.56
Nonoperating Income.			
Income from lease of road..	339,066.06	341,310.21	D 2,244.15
Miscellaneous rent income..	698,306.29	744,514.14	D 46,207.85
Miscellaneous nonoperating physical property.....	60,172.65	64,720.76	D 4,548.11
Dividend income.....	9,328,273.00	9,333,498.51	D 5,225.51
Income from funded securities	384,618.00	833,603.83	D 448,985.83
Income from unfunded securities and accounts.....	265,357.75	295,810.26	D 30,452.51
Miscellaneous income.....	3,370.55	130,025.99	I 133,396.54
Total nonoperating income.	11,079,164.30	11,483,431.72	D 404,267.42
Gross income.....	33,306,483.64	31,344,508.50	I 1,961,975.14
Deductions from Gross Income.			
Rent for leased roads.....	51,320.66	51,320.66	I
Miscellaneous rents.....	13,861.72	13,401.28	I 460.44
Interest on funded debt....	14,783,165.43	14,767,618.76	I 15,546.67
Interest on unfunded debt..	242,163.95	297,459.35	D 55,295.40
Amortization of discount on funded debt.....	40,104.69	20,938.00	I 19,166.69
Miscellaneous income charges	231,579.60	223,526.32	I 8,053.28
Total deductions from gross income	15,362,196.05	15,374,264.37	D 12,068.32
Net income.....	17,944,287.59	15,970,244.13	I 1,974,043.46
Dividend appropriations.....	12,400,000.00	12,400,000.00	I
Balance for the year.....	\$5,544,287.59	\$3,570,244.13	I \$1,974,043.46

Earnings

Freight Business.

Freight revenue was \$76,301,307.69, an increase of \$2,878,767.40 or 3.92 per cent.

The number of tons of revenue freight carried was 22,407,726, a decrease of 1,583,806, or 6.60 per cent.

6,751,142,456 tons of revenue freight were moved one mile, an increase of 202,471,298 tons one mile, or 3.09 per cent.

The average revenue per ton mile increased from 1.121 cents to 1.130 cents.

The revenue train load increased from 658.64 to 668.57 tons. The total train load, including company freight, increased from 752.87 to 762.78 tons.

The number of miles run by revenue freight trains, including proportion of mixed, was 10,097,831, an increase of 155,078, or 1.56 per cent.

Passenger Business.

Passenger revenue was \$13,201,179.08, an increase of \$33,237.34, or .25 per cent.

Mail revenue was \$1,788,522.15, an increase of \$61,810.33, or 3.58 per cent.

Express revenue was \$1,690,015.98, a decrease of \$343,941.49, or 16.91 per cent.

Sleeping car, parlor and chair car, excess baggage and miscellaneous passenger revenue was \$1,139,919.28, an increase of \$63,670.31, or 5.92 per cent.

Total revenue from persons and property carried on passenger and special trains was \$17,819,636.49, a decrease of \$185,223.51, or 1.03 per cent.

The number of passengers carried was 3,151,767, a decrease of 456,220, or 12.64 per cent. The number of passengers carried one mile was 426,514,855, an increase of 13,397,940, or 3.24 per cent.

The number of miles run by revenue passenger trains, including proportion of mixed, was 9,616,747, a decrease of 75,095, or .77 per cent.

The average revenue per passenger mile decreased from 3.187 to 3.095 cents.

Transportation—Rail Line

The charges for transportation expenses were \$33,538,233.50, a decrease of \$652,100.85, or 1.91 per cent, as against an increase in total operating revenue of 2.70 per cent.

Maintenance of Equipment

The charges for maintenance of equipment were \$17,605,304.29, a decrease of \$1,070,622.91, or 5.73 per cent. Of the total charges \$3,987,071.73 represents depreciation, accrued at the rate of 4 per cent.

Locomotives

Total number of locomotives on active list, December 31, 1924....	1,417
Additions:	
Locomotives reacquired.....	2
	1,419
Deductions:	
Locomotives sold.....	20
Locomotives withdrawn from service, to be sold or dismantled	94
	114
Total locomotives on active list, December 31, 1925.....	1,305
In addition to locomotives on active list there were:	
Withdrawn from service and on hand December 31, 1924..	12
Withdrawn from service during the year.....	94
	106
Less—Dismantled	95
Sold	2
Transferred to Work Equipment.....	2
	99
Leaving on hand locomotives withdrawn from service which may be sold or dismantled.....	7

Hauling Capacity

	Number	Tractive power (Pounds)	Total weight on drivers of locomotives (Pounds)	Total weight of locomotives (Pounds)
Assignment December 31, 1924.	1,417	53,972,450	241,773,189	309,501,374
Added during year, locomotives re-acquired	2	62,400	298,000	298,000
Added during year*.....	....	36,100	68,800	178,500
Total	1,419	54,070,950	242,139,989	309,977,874
Locomotives sold or withdrawn from service.....	114	2,857,770	13,012,411	16,489,236
Total December 31, 1925..	1,305	51,213,180	229,127,578	293,488,638

*Changes in weights and tractive power are due to locomotives being simplified, locomotives having superheaters applied, changes in steam pressure and in size of cylinders.

Earnings and Expenses Per Mile Operated

	1917	1921	1922	1923	1924	1925
Operating revenues per mile.....	\$13,526.37	\$14,199.10	\$14,467.89	\$15,294.98	\$14,265.46	\$14,620.55
Operating expenses per mile.....	8,171.39	11,659.73	10,940.92	12,050.52	10,558.94	10,453.59
Net operating revenue per mile.....	5,354.98	2,539.37	3,526.97	3,244.46	3,706.52	4,166.96
Taxes per mile.....	1,059.52	1,353.87	1,269.54	1,268.99	1,279.47	1,396.39
Net after taxes.....	\$4,295.46	\$1,185.50	\$2,257.43	\$1,975.47	\$2,427.05	\$2,770.57

Ratios

	1917	1921	1922	1923	1924	1925
Operating expenses to operating revenues.....	60.41%	82.12%	75.62%	78.79%	74.02%	71.50%
Transportation expenses to operating revenues.....	32.34%	37.87%	38.31%	37.78%	35.88%	34.27%
Taxes to operating revenues.....	7.83%	9.53%	8.77%	8.30%	8.97%	9.55%

[ADVERTISEMENT]

Condition	December 31, 1925		December 31, 1924	
	Number	Per cent	Number	Per cent
Good	1,100	84.29	1,168	82.43
Fair	57	4.37	66	4.66
At shops or awaiting shop	119	9.12	92	6.49
Unserviceable, awaiting disposition	29	2.22	91	6.42
	1,305	100.00	1,417	100.00
Number of oil burning locomotives	20	1.53	71	5.01
Number of locomotives equipped with superheaters	770	59.00	744	52.51
Number of locomotives equipped with Stokers	242	18.54	178	12.56

Freight car situation on December 31st.

	1925		1924		Increase— Decrease—D
	Number	Per cent	Number	Per cent	
N. P. cars on line	35,970		35,605		I 365
Foreign cars on line	8,142		10,030		D 1,888
Total cars on line	44,112		45,635		D 1,523
N. P. cars on foreign lines	13,181		12,095		I 1,086
Number of cars unserviceable	2,348		3,187		D 839
Percentage of unserviceable to total cars on line	5.32		6.98		D 1.66
Number of cars requiring heavy repairs	1,560		1,912		D 352
Percentage of above to total cars on line	3.54		4.19		D .65
Number of cars requiring light repairs	788		1,275		D 487
Percentage of above to total cars on line	1.79		2.79		D 1.00

Maintenance of Way and Structures

The charges for maintenance of way and structures were \$12,759,189.65, an increase of \$518,334.54, or 4.23 per cent.

Bridges.

103 bridges were replaced, of which 52 bridges, 11,031 lineal feet in length, were replaced by timber structures and 5 permanent and 46 timber structures were replaced in permanent form, as follows:

Replaced by embankment	35 bridges, 3,603 lineal feet.
Replaced by steel truss, girder, I-beam and reinforced concrete trestle	16 bridges, 2,409 lineal feet.
Total	51 bridges, 6,012 lineal feet.

In addition to changes referred to above, 34 temporary bridges were abandoned, 4 permanent and 25 temporary bridges were added and 153 culverts were rebuilt, 51 in temporary and 102 in permanent form.

There are now under construction 379 lineal feet of girder and I-beam spans and 149 lineal feet of reinforced concrete trestle for single track.

Bridges as they existed December 31, 1925.

Description	Number	Lineal feet	Miles
Steel, iron, stone and concrete permanent bridges.	836	148,456	28.12
Timber and combination iron and timber structures	2,400	367,259	69.55
Total	3,296	515,706	97.67

Total length of timber structures replaced by steel bridges, embankments or other permanent form from July 1, 1885, when work was commenced, to December 31, 1925, 147.22 miles.

In 1925 Granite Viaduct near Sand Point, Idaho, was strengthened and the truss span over Thompson River near Thompson Falls, Montana, was replaced with heavier girder spans to permit the operation of heavier power between Paradise, Montana, and Parkwater, Washington.

In 1926 Greenhorn Viaduct near Helena, Montana, will be strengthened and the draw span over Commencement Bay, Tacoma, Washington, will be replaced with a heavier span.

Buildings.

New buildings and structures or increased facilities have been provided at the following stations:

Minnesota: Big Lake, Brainerd, Dilworth, East Grand Forks, Hinckley, La Belle, Minneapolis, Moorhead, Northtown, St. Cloud, St. Paul, Topelius, Wadena.

North Dakota: Cannon Ball Junction, Cooperstown, Dana, Dickinson, Fargo, Milnor.

Montana: Billings, East Helena, Helena, Laurel, Livingston.

Washington: Auburn, Ellensburg, Interbay, Olcqua, Seattle, South Tacoma, Sumas, Tacoma, Tenino, Tieton.

Water Supply.

At Poplar, Wisconsin, a new concrete dam was constructed. Work is in progress on water treating plants at Dawson, Jamestown and Medina, North Dakota. It is anticipated that these plants will be ready for service by May 1, 1926.

Block Signals and Interlockers.

The automatic train control between Mandan and Dickinson, North Dakota, as required by the Interstate Commerce Commission's Order 13413, was completed September 25, 1925, and placed in operation. As the time specified for the fulfillment of the order

of January 14, 1924, commonly referred to as the "second order," requiring the installation of automatic train control between Dickinson, North Dakota, and Glendive, Montana, would expire on February 1, 1926, an application was made to the Interstate Commerce Commission for an extension to December 31, 1927. The Commission refused such extension, but made an order fixing the effective date of fulfillment as July 18, 1926.

Line Changes.

Line changes and grade revision east of Lincoln, Minnesota, reducing the existing 0.5% grade against eastbound traffic to 0.2% was completed and placed in operation in November, 1925.

The work of elevating tracks between Johnson Street and Lowry Avenue on Line "B" in Northeast Minneapolis, Minnesota, was continued during the year. The bridges carrying the railway tracks over Johnson Street, Central Avenue, 18th Avenue, Monroe Street and 19th Avenue, as well as the bridge carrying the Pocket Yard track over Johnson Street, have been completed and permanent or temporary approach grades placed at either end of the completed sections. During 1925 the west end of the East Minneapolis Yard was raised to conform to the new track level over Johnson Street, and a new four-track transfer yard constructed to replace the two tracks paralleling the Pocket Yard connection over which interchange of cars with the Great Northern Railway had previously been made. In 1926 the separation of grades will be made at Broadway, Buchanan and Fillmore Streets, which will complete the work east of 19th Avenue.

A change of line near Lo Lo, Montana, eliminating two grade crossings, was completed in December, 1925. The work was done in conjunction with the Commissioners of Missoula County.

A change of line and channel at Mullan, Idaho, was completed in May, 1925, eliminating two pile bridges and two grade crossings. The work was done in conjunction with the State Highway Commission.

Miscellaneous.

Work was begun in April, 1925, on an extension 660 feet in length to the ore dock at Superior, Wisconsin, adding storage capacity of 38,500 tons, and making the total capacity 109,200 tons. This improvement is now complete.

A new power plant at Brainerd, Minnesota, was completed and put into operation in October, 1925. The plant consists of four 600 h. p. water tube boilers, equipped with automatic stokers, coal conveyors, ash conveyors, and all the latest and most efficient devices for the economical production of steam.

The work of constructing a new coach yard at Third Street, St. Paul, Minnesota, has been in progress during the year and was completed and turned over for operation early in February, 1926. The work involved the construction of about six miles of track for coach storage, equipped complete with intermediate platforms, steam connections, hot and cold water piping, compressed air mains, etc., and the construction of a number of brick and concrete fireproof buildings to be used by the Dining Car Department and Pullman Company, and by the Mechanical Department in connection with the cleaning and repairing of passenger cars. The buildings consist of a two story commissary, one story Pullman service building, storehouse and oil house, coach repair shop, battery and carpenter shop, fuel sheds, carpet cleaning platform, ice house, and a modern power plant equipped with three 200 h. p. boilers.

The construction by the Northern Pacific of a branch line of railway in the State of Idaho, extending from Oro Fino to Headquarters, a distance of 40.96 miles, to serve the Clearwater timber district, was authorized. Contract was awarded October 15, 1925, to Twohy Brothers of Spokane, and work is in progress. The line is to be jointly owned and operated by the Northern Pacific Railway Company and the Oregon-Washington Railroad and Navigation Company.

The extension of the Elma Branch to Shelton, Washington, including the rehabilitation of the Port Blakely Mill Company's line from Stimson to Kamilche, was completed and turned over for operation from Stimson to M. P. 15 on July 11, 1925, and the balance of the line to M. P. 25+, at Shelton, on October 3, 1925, at increase in branch line mileage of approximately 15.25 miles.

Two 400 h. p. motors with necessary equipment and housing were installed at ventilating plant Stampede tunnel in the Cascade Mountains, and placed in service, replacing steam equipment which will be used elsewhere.

General

Financial Results of Operation.

The operation of your property, after all charges, resulted in a net income of \$17,944,287.59, an increase of \$1,974,043.46. While there was a small increase in passenger revenue there was a reduction in the number of passengers carried, indicating that the automobile and motor bus have taken a large share of the short haul business. There was a slight decrease in the average rate

per passenger mile, but an increase of over 18 per cent in the average miles traveled by each passenger. Other passenger train revenue showed a decrease of \$218,460.85; the express revenue alone decreased \$343,941.49, the result of a decrease in express rates. The freight revenue increased \$2,878,767.40, or 3.92 per cent, while tons carried one mile increased 3.09 per cent. The average distance hauled increased from 272.96 miles to 301.29 miles, or 10.38 per cent. The average revenue per ton mile increased from \$.01121 to \$.01130.

The operating revenues of the Company increased \$2,572,150.98, or 2.70 per cent compared with 1924, while operating expenses decreased \$560,587.86, or .79 per cent. The net revenue increased \$3,132,738.84, or 12.65 per cent. Transportation expenses decreased \$652,100.85, or 1.91 per cent, while the train miles increased .44 per cent.

Return on Property.

Year ending December 31,	Railway Property Investment including Material and Supplies and Working Cash at end of Year	Net Railway Operating Income	Return on Investment Per cent
1916	\$521,303,308	\$33,446,012	6.416
1917	526,294,063	30,491,140	5.794
1918	533,605,992	24,217,342	4.538
1919	534,450,449	14,368,479	2.688
1920	549,775,317	7,949,458	1.446
1921	561,436,950	10,843,826	1.931
1922	560,271,172	19,450,515	3.472
1923	583,882,752	17,100,557	2.929
1924	588,886,578	19,861,077	3.373
1925	598,746,382	22,227,319	3.712

In the ten years ended December 31, 1925, the sum of \$88,543,321 has been expended on additions and betterments to the property, so as to enable the Company to give better service and overcome in part the increased costs; while in the same period, not counting the increase in debt due to the refunding of the Northern Pacific-Great Northern (C. B. & Q. Collateral) Joint 4's in 1921, the total debt outstanding in the hands of the public decreased \$3,414,900.

While there has been an improvement in the rate of return since 1920, when Federal Control ceased, the returns are much less than they were prior to that period. As stated in the Annual Report for 1924, the general rate basis is too low.

The petition filed in April, 1925, with the Interstate Commerce Commission by sixty-six western railroads asking for increases in rates, which would result in yielding to the carriers a return of not less than 5 3/4 per cent, is now before the Commission. Hearings were held late in the year on that application and on a general investigation of the rate structure of the country ordered by the Commission pursuant to the so-called Hoch-Smith resolution. Briefs have been submitted and the case will be argued orally in the near future.

Claim Against the Government.

The claim against the Government covering the guaranty period ended September 1, 1920, was argued and submitted to the Interstate Commerce Commission on January 7, 1926, and the Commission now has it under advisement.

Valuation Work.

The conferences with representatives of the Bureau of Valuation of the Interstate Commerce Commission, about the preliminary engineering report heretofore served upon the Company, which were begun in 1923, were continuing during 1925. Similar conferences about the preliminary land report were concluded and the final land report was served upon the Company on January 28, 1926. It is thought that tentative valuation report will be received some time during the year 1926.

Tentative valuation reports upon the Centralia Eastern Railroad Company and the Billings and Central Montana Railway Company have been received. As the values reported were considered too low, protests against these reports have been filed with the Commission.

At the end of 1925, thirty-eight employees were engaged in valuation work, and the amount expended by the Company to that date in connection with this work was \$2,152,880.19.

Land Department.

Statements summarizing the operations of the Land Department for the year appear on pages 45 and 46.

The year's transactions compare favorably with those for the previous year except as to the amount collected as deferred payments on contracts. Land sales in 1925 amounted to 114,333.07 acres for a consideration of \$2,252,934.11, compared with 127,175.52 acres for a consideration of \$2,161,585.58 in 1924. The acreage in contracts cancelled in 1925 was 232,704.71 acres, compared with 225,305.44 acres in 1924. The net cash receipts in 1925 amounted to \$579,437.60, compared with \$1,558,771.62 in 1924, the difference being largely accounted for by decrease in collections on deferred payments on contracts. In 1924 large payments were made in completion of timber contracts in Idaho and Washington ahead of maturity, for which there were no counterparts in 1925.

There is still a brisk demand for stumpage in Idaho and Washington. The outlook for increased sales of land and timber in 1926 is good. Notwithstanding some disappointment in the results of the 1925 crop in North Dakota and Montana, prices were maintained at fair levels and agricultural conditions have continued to improve so that farmers have been able to strengthen their financial condition materially during the past year. There has been no slacking in effort, but on the contrary new interests have been developing in farm and range lands so that substantial progress may be expected during 1926 in the reoccupation of vacant farming areas in the Company's territory. A widespread campaign for advertising Eastern Montana lands has been conducted by the Land Department for some time, and is being well received in the Central West.

Norpac and Impro Iron Ore Properties.

An outstanding transaction of the year was the leasing of the Norpac and Impro Iron Ore properties near Hibbing, Minnesota, to the Hanna Ore Mining Company, as a result of which your Company will be relieved of heavy taxes immediately and assured of substantial royalty payments.

Oil Development.

The Absaroka Oil Development Company discontinued operations on December 31, 1925, and from now on no drilling will be done by it, but the practice of interesting others in drilling operations will be continued.

Rosbud Coal Field.

In south central Montana enormous deposits of a very high grade of sub-bituminous coal—approximately twenty billion tons—are known to exist, underlying an area of over seven hundred square miles, some of it under lands owned by Northern Pacific. The vein extends into Wyoming where the quantities are unknown.

Examinations of the field made by the Company showed possibilities for obtaining a supply of locomotive fuel at substantially lower cost than from its underground mines in the Red Lodge field. It was, therefore, decided to obtain additional lands, or rights in lands by lease or purchase, and to obtain from this field the locomotive fuel supply for that part of the railroad between the Missouri River and the Bitter Root Mountains. A branch railroad to serve this field was constructed from the main line near Forsyth, Montana, southwardly to Colstrip, Montana, a distance of about thirty miles, at a cost of \$1,361,000. The branch was completed and ready for operation September 1, 1924. Mining operations by the open pit method were started during that month, and up to December 31, 1925, nearly 800,000 tons of coal had been produced.

Taxes.

The following statement shows taxes accrued each year during the past four years:

	1922	1923	1924	1925
State taxes.....	\$8,257,045.00	\$7,748,214.88	\$7,613,707.86	\$7,868,689.54
Federal taxes.....	142,538.11	662,883.31	892,660.95	1,433,269.69
Canadian and miscellaneous taxes.....	31,000.00	51,792.37	40,388.90	44,936.61
Totals.....	\$8,430,583.11	\$8,462,890.56	\$8,546,757.71	\$9,346,895.84

Comparative Statement of Payrolls.

A comparison of payrolls for a period of years ending December 31, follows:

1916.....	\$28,204,669
1917.....	35,877,879
1918.....	49,632,127
1919.....	52,605,396
1920.....	66,503,794
1921.....	50,643,526
1922.....	49,041,401
1923.....	51,921,572
1924.....	45,950,886
1925.....	46,188,348

Security Owners and Employees.

There are now 37,322 owners of stock and about 30,000 owners of bonds of the Company.

As showing the number of small stockholders, the following figures are interesting:

20,122 hold from 1 to 19 shares;
12,225 hold from 20 to 99 shares;
32,351 or 86.68 per cent hold less than 100 shares each;
4,971 hold 100 or more shares.

Total 37,322

14,576 of the stockholders are women;

2,731 are savings banks, insurance companies, trustees, guardians, colleges and charitable institutions.

The average number of employees in 1925 was 26,831.

Improvement in Freight Car Equipment.

On December 31, 1920, the Company had 48,729 freight cars with a total capacity of 1,872,735 tons, and an average capacity of 38.43 tons. Since that date many old weak cars of small

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capacity have been dismantled; others have been rebuilt and new cars purchased, so that on December 31, 1925, the Company had 49,151 freight cars with a total capacity of 1,967,425 tons, and an average capacity of 40.03 tons.

Improvement in freight car condition is indicated by the following tabulation:

	March 1, 1920	Dec. 31, 1925
Cars new or rebuilt within 5 years.....	5,272	28,167
Cars with steel center sills.....	18,860	22,821
Cars with steel underframes.....	3,773	12,423
Cars—all steel construction.....	3,795	4,204
Cars with metal roofs.....	19,094	29,256
Cars with steel ends.....		4,994

Freight cars, passenger cars, and locomotives are now in better condition than at any time since 1917. Seven hundred seventy locomotives are now equipped with superheaters, and two hundred forty-two with mechanical stokers. The total tractive power of locomotives is 51,213,180 pounds, an average of 39,244 pounds, as against total tractive power of 46,467,200 pounds, and an average of 34,142 pounds on December 31, 1917.

Lines Abandoned.

The Marysville Branch, 12.57 miles in length, and the Rimini Branch, 12.83 miles in length, in Montana, were abandoned under authority of the Interstate Commerce Commission.

Erroneous Inclusion of Northern Pacific Lands within the Boundaries of National Forests.

Reference to this subject was made in previous reports. Investigation is still pending. Hearings covering a period of about two and one-half months were held by the Joint Congressional Committee in the early part of 1925, and they were resumed April 14, 1926. It is believed that they will be concluded this year.

Financial Condition.

During the past year equipment trust certificates amounting to \$3,525,000 have been issued and outstanding securities amounting to \$1,356,000 have been retired, making a net increase in

funded debt of \$2,169,000, or from \$318,649,000 to \$320,818,000. The net expenditures for additions and betterments amounted to \$8,634,349.

Personnel.

On July 1, 1925, Mr. C. W. Bunn, Vice President and General Counsel, after nearly twenty-nine years of service, retired as General Counsel and was succeeded by Mr. D. F. Lyons, who for the past six years had been General Solicitor. Mr. Bunn remains as Vice President and Special Counsel.

On July 1, 1925, Mr. F. E. Williamson was appointed Vice President in charge of maintenance and operation to succeed Mr. A. M. Burt, deceased.

Pension Department.

The Company's pension plan has now been in operation since May 1, 1922. On December 31, 1925, there were on the retired list 459 employees, whose average monthly allowance was \$48.35. During the year 116 employees were added to the list and 46 died. The total amount disbursed during the year was \$252,061.28.

Group Insurance.

The group insurance plan which was put into effect on October 1, 1924, mention of which was contained in the annual report for that year, has been in operation over a year and the results have been very satisfactory.

Subsidiary Companies.

The operating results of the Spokane, Portland and Seattle Railway Company, together with its subsidiaries, the Oregon Trunk, Oregon Electric and United Railways, will be found on page 47 and those of the Minnesota and International Railway Company on page 48.

By order of the Board of Directors,
HOWARD ELLIOTT,
Chairman.
CHARLES DONNELLY,
President.

GENERAL BALANCE SHEET, DECEMBER 31, 1925

ASSETS			LIABILITIES		
	1925	1924		1925	1924
INVESTMENTS.			STOCK.		
ROAD AND EQUIPMENT:			Capital stock—common.....		
Road	\$457,475,852.48	\$452,620,493.28		\$248,000,000.00	\$248,000,000.00
Equipment	114,474,266.58	110,652,496.05	GOVERNMENTAL GRANTS.		
General	3,449,016.05	3,491,796.90	Grants in aid of construction	525,467.79	526,233.97
	575,399,135.11	566,764,786.23			
DEPOSITS IN LIEU OF MORTGAGED PROPERTY (Net moneys in hands of Trustees from sale of land grant land, etc.)			LONG TERM DEBT.		
	364,334.44	1,491,096.83	Funded debt (see page 22)...	337,984,500.00	335,815,500.00
MISCELLANEOUS PHYSICAL PROPERTY			Less—held by or for the Company	17,166,500.00	17,166,500.00
	10,095,612.06	9,948,439.43		320,818,000.00	318,649,000.00
INVESTMENTS IN AFFILIATED COMPANIES.			Total Capital Liabilities...	569,343,467.79	567,175,233.97
Stocks	144,085,285.01	144,085,286.01			
Bonds	30,202,647.75	30,202,647.75	CURRENT LIABILITIES.		
Notes	2,262,788.92	2,379,399.35	Traffic and car service balances payable.....	843,628.75	921,570.01
Advances	3,895,220.58	3,146,344.35	Audited vouchers and wages payable	5,918,132.89	6,593,157.24
	180,445,942.26	179,813,677.46	Miscellaneous accounts payable	1,052,889.53	793,554.28
OTHER INVESTMENTS.			Interest matured unpaid.....	5,370,975.75	5,381,315.00
Stocks	1.00	1.00	Unmatured dividends declared	3,100,000.00	3,100,000.00
Bonds	1,829,663.74	1,784,875.07	Unmatured interest accrued	419,843.54	385,109.16
U. S. Treasury notes.....	1,269,531.25	1,269,531.25	Unmatured rents accrued....	7,456.57	7,278.45
Advances	750.00	750.00	Other current liabilities.....	148,530.89	145,766.95
Contracts for sale of land grant lands	4,961,371.17	5,727,197.58			
	8,061,317.16	8,781,604.90	Total Current Liabilities...	16,861,457.92	17,327,751.09
Total Capital Assets.....	774,366,341.03	766,799,604.85	DEFERRED LIABILITIES.		
CURRENT ASSETS.			Other deferred liabilities....	210,415.14	184,105.80
Cash	10,360,595.40	9,229,906.54		210,415.14	184,105.80
Special deposits	5,749,328.89	5,321,833.62	UNADJUSTED CREDITS.		
Loans and bills receivable	101,036.00	8,346.86	Tax liability.....	7,478,131.13	7,523,876.19
Traffic and car service balances receivable	1,964,959.94	1,783,589.61	Accrued depreciation of equipment	40,466,753.24	38,393,563.62
Net balances receivable from agents and conductors....	727,247.69	803,655.05	Other unadjusted credits....	1,276,290.06	1,303,276.95
Miscellaneous accounts receivable	3,744,518.99	3,484,195.30		49,221,174.43	47,220,716.76
Material and supplies.....	10,935,307.43	12,196,205.87	CORPORATE SURPLUS.		
Interest, dividends and rents receivable	118,338.76	109,908.01	Additions to property through income and surplus.....	493,772.20	441,840.40
Other current assets.....	131,613.44	112,165.55	Funded debt retired through income and surplus.....	16,723,002.79	16,333,382.79
Total Current Assets....	33,832,846.54	33,049,806.41	Miscellaneous fund reserves	283,214.30	1,337,860.85
DEFERRED ASSETS.					
Working fund advances....	26,837.12	32,563.33		17,499,989.29	18,113,084.04
Other deferred assets.....	299,094.03	59,100.77	Profit and loss balance.....	163,757,021.89	158,692,074.84
	325,931.15	91,664.10			
UNADJUSTED DEBITS.			Total Corporate Surplus...	181,257,011.18	176,805,158.88
Rents and insurance premiums paid in advance....	28,238.99	29,899.99			
Balance of Guaranty due from Government.....	2,775,317.59	2,775,317.59			
Discount on funded debt....	2,451,599.87	2,376,903.84			
Other unadjusted debits....	3,113,251.29	3,589,769.72			
	8,368,407.74	8,771,891.14			
Grand total	\$816,893,526.46	\$808,712,966.56	Grand Total.....	\$816,893,526.46	\$808,712,966.56

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The New York, Chicago and St. Louis Railroad Company—Third Annual Report, Year Ended December 31, 1925

To the Stockholders of

THE NEW YORK, CHICAGO AND ST. LOUIS RAILROAD COMPANY:

The Board of Directors herewith submits its report for the year ended December 31, 1925.

The authorized capital stock of the company is \$105,500,000, of which \$78,967,900 was authorized to be issued in exchange for stocks of the constituent companies. On December 31, 1925, the status of the capital stock was as follows:

Issued and outstanding:		
Common	\$ 30,336,244	
Preferred	25,822,821	\$ 56,159,065
Issued and held in Treasury:		
Common	\$ 15,795,456	
Preferred	6,843,379	22,638,835
To be issued for stocks of constituent companies:		
Common	\$ 116,200	
Preferred	53,800	170,000
Total capital stock at December 31, 1925.....		\$78,967,900

The funded debt outstanding at December 31, 1924, was... \$110,330,000
It was decreased during the calendar year

by retirement of:	
Equipment Trust Certificates of 1916....	\$ 110,000
Engine Trust Certificates of 1916.....	30,000
Equipment Trust Certificates of 1917....	229,000
Equipment Trust Certificates of January 15, 1920	43,200
Freight Car Equipment Notes of 1920....	78,800
U. S. Government Loan Notes, Series 1921	46,000
Equipment Trust Certificates of 1922....	34,000
Second Equipment Trust Certificates of 1922	225,000
Equipment Trust Certificates of 1923....	285,000
Equipment Trust Certificates of 1924....	191,000
Serial Notes to New York Central Railroad	130,000
Prior Lien Bonds.....	9,575,000
First Mortgage Bonds	105,000
	11,082,000

It was increased during the calendar year

by issuance of:	
Refunding Mortgage Bonds	9,575,000

Funded debt outstanding as of December 31, 1925\$108,823,000

General Balance Sheet, December 31, 1925

ASSETS		LIABILITIES	
INVESTMENTS		STOCK	
Investment in road and equipment		Capital stock	
Road	\$150,658,599 36	Common	\$ 46,129,000 00
Equipment	45,682,832 46	Cumulative preferred,	
General expenditures	523,425 72	Series A	32,661,700 00
	\$196,864,857 54	Ownership certificates	
Improvements on leased		Common	2,700 00
railway property	84,090 27	Cumulative preferred,	
Sinking fund for equip-		Series A	4,500 00
ment trust certificates.....	159 50		\$ 78,797,900 00
Deposits in lieu of mort-		STOCK LIABILITY FOR CONVERSION	
gaged property sold.....	33,920 00	Common	\$ 116,200 00
Miscellaneous physical		Cumulative preferred,	
property	736,263 85	Series A	53,800 00
Investments in affiliated			170,000 00
companies			78,967,900 00
Stocks	\$ 18,798,451 85	LONG TERM DEBT	
Bonds	552,601 00	Funded debt unmatured	
Advances	14,400 00	Equipment obliga-	
	19,365,452 85	tions	\$ 13,722,000 00
Other investments		Mortgage bonds ...	92,683,000 00
Stocks	\$ 500 00	Mortgage bonds nomin-	
Bonds	291 57	ally issued	12,079,000 00
Notes	36,800 00	Collateral trust notes	
Miscellaneous	3,140 00	Note to U. S. R. R.	
	40,731 57	Administration ..	1,000,000 00
	\$217,125,475 58	U. S. Govt. loan	
CURRENT ASSETS		notes, Series 1921 ..	508,000 00
Cash	\$ 4,090,779 70	Miscellaneous obligations	
Time drafts and deposits.....	2,099,000 00	Serial notes to New	
Special deposits	1,497,007 75	York Central R.R..	910,000 00
Loans and bills receivable.....	517 60		\$120,902,000 00
Traffic and car service		RECEIVER'S CERTIFICATES OF INDEBTEDNESS	
balances receivable	1,695,408 61		
Net balance receivable from			508,000 00
agents and conductors.....	532,824 64		121,410,000 00
Miscellaneous accounts receivable...	1,152,553 39	CURRENT LIABILITIES	
Material and supplies.....	4,381,087 12	Loans and bills payable.....	2,000 00
Interest and dividends re-		Traffic and car service balances pay-	
ceivable	455,072 13	able	1,974,744 30
Rents receivable	12,863 36	Audited accounts and wages payable	4,441,934 84
Other current assets.....	139,341 58	Miscellaneous accounts payable.....	611,148 31
	16,056,455 88	Interest matured unpaid.....	597,955 75
DEFERRED ASSETS		Dividends matured unpaid.....	845,052 00
Working fund advances.....	\$ 17,233 27	Funded debt matured unpaid.....	54,000 00
Insurance and other funds.....	10,287 50	Unmatured interest accrued.....	1,052,146 23
Other deferred assets.....	6,198 00	Other current liabilities.....	275,440 42
	33,718 77		9,854,421 85
UNADJUSTED DEBITS		DEFERRED LIABILITIES	
Rents and insurance premiums		Other deferred liabilities.....	709,260 09
paid in advance.....	\$ 62,500 00	UNADJUSTED CREDITS	
Discount on funded debt.....	3,099,107 58	Tax liability.....	\$ 2,589,035 50
Other unadjusted debits.....	1,980,485 77	Accrued depreciation—Equipment.....	10,433,714 79
Securities issued or assumed—		Other unadjusted credits.....	621,652 44
Unpledged			13,644,402 73
Capital stock—Common		CORPORATE SURPLUS	
Cumulative preferred	\$ 15,795,456 00	Additions to property through in-	
Second and improvement	6,843,379 00	come and surplus.....	\$ 147,256 43
mortgage bonds	690,000 00	Funded debt retired through in-	
	23,328,835 00	come and surplus.....	196,613 75
Securities issued or as-		Miscellaneous fund reserves.....	14,400 00
sumed—Pledged			
Second and improvement		Total appropriated surplus.....	\$ 358,270 18
mortgage bonds....	\$1,389,000 00	Profit and loss—Balance.....	48,639,323 73
Receiver's certificates of			48,997,593 91
indebtedness	508,000 00		
First mortgage bonds	10,000,000 00		
	11,897,000 00		
	40,367,928 35		
	\$273,583,578 58		

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Under Finance Docket No. 4843, the Interstate Commerce Commission granted authority during the year to issue and sell Refunding Mortgage Bonds (Series B), par value \$9,575,000, to provide funds for the refundment of Toledo, St. Louis and Western Railroad Company Prior Lien Bonds, which matured July 1, 1925, and to issue and pledge under the Refunding Mortgage the remainder (par value \$10,000,000) of the authorized issue of Toledo, St. Louis and Western Railroad Company First Mortgage Bonds.

The usual financial and statistical statements are appended. The Board takes pleasure in acknowledging the fidelity, efficiency, and united efforts displayed by your officers and employees in the discharge of their duties during the year.

For the Board of Directors,

O. P. VAN SWERINGEN,
Chairman of the Board.

J. J. BERNET,
President.

Income Account

OPERATING INCOME	1925	1924
Railway operating revenues.....	\$ 54,670,916 66	\$ 53,992,434 88
Railway operating expenses.....	39,604,200 57	40,276,955 85
NET REVENUE FROM RAILWAY OPERATIONS	\$ 13,066,716 09	\$ 13,715,479 03
Railway tax accruals.....	2,965,517 71	2,737,032 51
Uncollectible railway revenues.....	7,907 20	18,730 02
.....	\$ 2,973,424 91	\$ 2,755,762 53
RAILWAY OPERATING INCOME.....	\$ 12,093,291 18	\$ 10,959,716 50
NONOPERATING INCOME		
Rent from locomotives.....	\$ 92,468 03	\$ 22,328 36
Rent from passenger-train cars.....	25,012 53	22,256 40
Rent from work equipment.....	19,528 84	19,755 57
Joint facility rent income.....	241,661 14	198,291 78
Miscellaneous rent income.....	153,175 86	144,274 51
Miscellaneous nonoperating physical property	23,908 80	25,918 56
Dividend income	1,157,775 00	994,860 00
Income from funded securities.....	31,363 17	39,722 50
Income from unfunded securities and accounts	156,158 64	246,318 33
Income from sinking and other reserve funds	425 00	425 00
Miscellaneous income	5,720 65	5,360 93
TOTAL NONOPERATING INCOME.....	\$ 1,907,197 66	\$ 1,719,511 94
GROSS INCOME.....	\$ 14,000,488 84	\$ 12,679,228 44

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Railway Financial News

(Continued from page 1343)

\$1,999,000 of such bonds to be sold at par to holders of the present preferred stock, the proceeds to be used to purchase securities of the subsidiary companies and to provide funds for additions and betterments made since June 1, 1925, or planned to be made in the near future and also covering a rehabilitation plan proposed to be carried out during the next two years and \$2,001,000 to be delivered to the Director General of Railroads and pledged as collateral security for a six-year note amounting to \$1,410,000.

4. A six-year 6 per cent collateral promissory note of \$1,410,000 payable to the order of the United States of America or to the order of the Director General of Railroads, said note to be exchanged for a like amount of government lien notes.

The capitalization of the company prior to its readjustment totaled \$20,079,820 in addition to which there was unpaid interest amounting to \$2,675,267 or a total of \$22,755,087. Fixed charges of the old company were \$255,320 and in addition to this there were contingent charges making a total of fixed and contingent charges of \$619,368. Under the new plan the capitalization totals \$15,393,314 with fixed charges totaling only \$204,000. Unpaid equipment trust obligations totaling \$371,517 remain undisturbed in the readjustment.

The commission refused permission for the carrier to charge deferred maintenance expenses to its profit and loss account but required that they be charged to operating expenses in accordance with the commission's accounting rules.

An interesting feature of the reorganization is the fact that the stockholders have agreed to pay from their holdings, claims due to creditors, such payments to be made without expense to the railroad.

The Kansas, Oklahoma & Gulf owns a railroad line in Oklahoma and leases the Missouri, Oklahoma & Gulf in Kansas and has an operating agreement with the Kansas, Oklahoma & Gulf of Texas. It owns all the bonds and capital stock of these two companies except directors' qualifying shares of stock and the three roads form a continuous line extending from Military Junction, Kan., to Denison, Tex., 325 miles. No date for the sale of the property

DEDUCTIONS FROM GROSS INCOME

Hire of freight cars—Debit balance.....	\$ 1,425,808 59	\$ 1,147,559 78
Rent for locomotives.....	12,059 88	28,164 82
Rent for passenger-train cars.....	24,522 15	77,043 15
Rent for work equipment.....	8,028 48	5,034 39
Joint facility rents.....	409,135 35	374,890 93
Rent for leased roads.....	3,316 64	11,690 25
Miscellaneous rents	111,694 08	97,583 94
Miscellaneous tax accruals.....	4,003 12	6,387 86
Interest on funded debt.....	5,120,395 60	4,669,257 35
Interest on unfunded debt.....	279,761 77	269,895 87
Amortization of discount on funded debt..	95,919 55	71,047 08
Miscellaneous income charges.....	60,036 38	51,406 07

TOTAL DEDUCTIONS FROM GROSS

INCOME

NET INCOME.....

DISPOSITION OF NET INCOME

Income applied to sinking funds.....	\$ 98,429 35	\$ 98,184 40
Dividend appropriations of income.....	3,367,738 50	3,361,774 50

TOTAL SINKING FUND AND DIVIDEND

APPROPRIATIONS

INCOME BALANCE TRANSFERRED TO

PROFIT AND LOSS ACCOUNT.....

Profit and Loss Account

Credit balance December 31, 1924.....	\$ 45,793,113 32
Balance transferred from Income Account..	\$ 2,979,639 40
Profit on road and equipment sold.....	1,222 48
Discount on bonds purchased and retired..	6,570 65
Unrefundable overcharges	7,941 71
Donations	20,403 01
Miscellaneous credits, and adjustments....	9,097 01
.....	3,024,874 26
Loss on retired road and equipment.....	\$ 89,798 99
Surplus appropriated for investment in physical property.....	20,403 01
Debt discount extinguished through surplus..	5,000 00
Premium on equipment trust certificates purchased and retired.....	1,870 00
Miscellaneous debits	61,591 85
.....	178,663 85

CREDIT BALANCE DECEMBER 31, 1925..... \$ 48,639,323 73

has yet been set. It is hoped that the present plan of readjustment can be carried through without the necessity for a foreclosure sale. The receivership resulted from default of interest on the Series A bonds.

NEW YORK CENTRAL.—1925 *Earnings*.—See article and also excerpts from annual report on other pages of this issue.

NEW YORK, CHICAGO & ST. LOUIS.—1925 *Earnings*.—Annual report for 1925 shows net income after interest and other charges of \$6,445,807, equivalent after allowance for preferred dividends to \$16.14 a share on the common stock. Net income in 1924 was \$5,869,247 or \$14.26 a share. See excerpts from annual report on adjoining pages.

NORFOLK & WESTERN.—*Bonds Sold*.—The Guaranty Company of New York has sold \$6,000,000 divisional first lien and general mortgage 4 per cent bonds at 93¼ and accrued interest to yield over 4.5 per cent. The bonds mature July 1, 1944. They are secured by a direct mortgage lien on about 1,981 miles of road of which about 1,603 miles are main line and 378 miles branch line. This includes a first lien on about 338 miles and a junior lien on about 1,643 miles. Upon the issue of these bonds the aggregate amount of underlying bonds and divisional first lien and general mortgage bonds outstanding will be \$95,288,500 or about \$48,100 per mile on the mortgaged mileage.

Bonds Approved.—The Interstate Commerce Commission has approved the issuance of \$6,000,000 divisional first lien and general mortgage 4 per cent bonds to be sold at not less than 90, the proceeds to be used to reimburse the company's treasury for expenditures for capital improvement.

PENNSYLVANIA.—*Lease of Subsidiary*.—This company has applied to the Interstate Commerce Commission for authority to lease for 999 years the property of the Pennsylvania, Ohio & Detroit, of which it owns the stock, and which was recently authorized by the commission to lease the properties of a number of smaller companies which are part of the Pennsylvania system. This, the application says, "is in furtherance of the policy of applicant to secure unity of operation and management of the railroad properties which are a part of the Pennsylvania Railroad."

SEABOARD AIR LINE.—Offer to Extend Bonds.—This company has announced to holders of \$2,500,000 Seaboard & Roanoke first mortgage 5 per cent bonds maturing July 1, 1926, an offer to extend these bonds to July 1, 1931, with interest at 5 per cent. Deposits are to be made before June 1.

Rumor Denied.—A rumor that the Seaboard Air Line has purchased the Tennessee, Alabama & Georgia and will extend that line to Tradegear, near Jacksonville, Fla., has been denied.

WESTERN PACIFIC.—Bonds.—This company has applied to the Interstate Commerce Commission for authority to issue \$3,000,000 of 5 per cent first mortgage bonds, to be sold on competitive bidding at not less than 92, to provide funds to reimburse the treasury for \$973,472 of expenditures not yet capitalized and \$2,128,503 for improvements and new equipment.

1925 Earnings.—The annual report of the Western Pacific Railroad Company shows net income after interest and other charges of \$2,051,067, equivalent after allowance for 6 per cent preferred dividends to \$1.68 a share on the common stock. Net income in 1924 was \$1,329,264 or \$4.83 a share on the preferred stock. During the year the company put out of corporate surplus \$2,374,970 in dividends on the common stock and \$2,078,450 on the preferred stock, making a total of \$4,453,420. Selected items from the income statement follow:

WESTERN PACIFIC		1925	1924	Increase or decrease
Average mileage operated.....		1,042.39	1,042.39	.....
Railway operating revenues.....	\$15,569,045		\$14,370,467	\$1,198,578
Maintenance of way.....	\$2,238,096		\$2,760,367	—\$522,271
Maintenance of equipment.....	2,455,997		2,519,308	—63,311
Transportation.....	5,243,883		4,870,935	372,948
Total operating expenses.....	\$11,332,942		\$11,477,665	\$144,722
Operating ratio.....	72.79		79.87	—7.08
Net revenue from operations.....	\$4,236,103		\$2,892,802	\$1,343,301
Railway tax accruals.....	979,995		877,173	102,823
Railway operating income.....	\$3,254,470		\$2,008,718	\$1,245,752
Equipment rents, cr. bal.....	870,196		921,672	—51,476
Joint facility rents, cr. bal.....	173,873		53,220	120,653
Gross income.....	\$5,610,627		\$4,158,200	\$1,452,427
Rent for leased roads.....	3,000		3,000	.....
Interest on funded debt.....	1,918,250		1,763,121	155,129
Total deductions from gross income.....	\$3,159,560		\$2,828,935	\$330,625
Net income.....	\$2,451,067		\$1,329,265	\$1,121,802

Average Price of Stocks and Bonds

	May 11	Last Week	Last Year
Average price of 20 representative railway stocks.....	88.83	89.65	79.83
Average price of 20 representative railway bonds.....	95.61	95.66	91.26

Dividends Declared

Canadian Pacific.—Common, 2½ per cent, quarterly, payable June 30 to holders of record June 1.
 Chicago & North Western.—Common, 2 per cent, semi-annually; preferred, 3½ per cent, semi-annually, both payable June 30 to holders of record June 1.
 Chicago, Burlington & Quincy.—Five per cent, semi-annually, payable June 25 to holders of record June 19.
 Colorado & Southern.—First preferred, 2 per cent, semi-annually, payable June 30 to holders of record June 19.
 Maine Central.—Preferred, 1¼ per cent, payable June 1 to holders of record May 15.
 New York, Chicago & St. Louis.—Common, 1½ per cent, quarterly; common (from non-operating income), 1¼ per cent; preferred, series A, 1½ per cent, quarterly; all payable July 1 to holders of record May 15.
 North Pennsylvania.—Two per cent, quarterly, payable May 25 to holders of record May 17.

Valuation Reports

The Interstate Commerce Commission has issued final or tentative valuation reports, finding the final values for rate-making purposes, of the common-carrier property owned and used, as of the respective valuation dates, as follows:

FINAL REPORTS		
Atlantic, Wacross & Northern.....	\$88,500	1918
Galesburg & Great Eastern.....	105,070	1918
St. John & Ophir.....	123,951	1915
Tremont & Gulf.....	1,222,430	1916
Verde Tunnel & Smelter.....	577,101	1917
Willamette Valley & Coast.....	95,033	1917
TENTATIVE REPORTS		
Champlain Transportation Company.....	\$615,000	1916
Susquehanna & New York.....	1,269,500	1917

Railway Officers

Executive

C. G. Chadwick has been appointed assistant to the vice-president of the Midland Continental, with headquarters at Jamestown, N. D.

Horace Johnson, acting president, vice-president and general manager of the Duluth & Iron Range, with headquarters at Duluth, Minn., has been elected president and general manager.

Walter Walthall, assistant general freight and passenger agent of the Missouri-Kansas-Texas, with headquarters at San Antonio, Tex., has been promoted to executive general agent, with the same headquarters, representing all departments. This is a newly created position.

T. B. Koons, vice-president in charge of freight traffic of the Central of New Jersey, with headquarters at New York, has been granted a six-months' leave of absence. **A. Hamilton**, freight traffic manager, will have charge of all matters heretofore under the jurisdiction of Mr. Koons.

Financial, Legal and Accounting

Gilbert M. Hair, formerly solicitor of the Western region of the Canadian National, has been appointed regional counsel, with headquarters at Winnipeg, Man., succeeding R. H. M. Temple, promoted.

Reginald H. M. Temple, regional counsel and general claim agent of the Canadian National, with headquarters at Winnipeg, Man., has been appointed assistant general counsel, with

headquarters at Montreal, Que. Mr. Temple, who was born in England, was commissioner of the Heidelberg district of South Africa under the South African government prior to coming to Canada. He entered the service of the Canadian National twenty years ago as a member of the accounts branch of the construction department. Mr. Temple later became claim agent, and then was transferred to the legal department, subsequently becoming general solicitor at Toronto. In April, 1919, Mr.



R. H. M. Temple

Temple was appointed regional counsel, which position he was holding at the time of his recent appointment as assistant general counsel.

Operating

R. E. Newcomer has been appointed assistant to the general manager of the Wabash, with duties in connection with labor questions and with headquarters at St. Louis, Mo., succeeding **A. L. Robinson**, deceased.

J. W. Crane, who has been on leave of absence, has resumed his duties as assistant superintendent of the Saskatoon division of the Canadian National, with headquarters at Saskatoon, Sask. **J. A. Rogers**, who has been acting assistant superintendent, has returned to his position as division engineer of the Saskatoon division.

J. W. Mode, assistant superintendent of the Fort Worth & Denver City, with headquarters at Amarillo, Tex., has been appointed acting superintendent, with headquarters at Childress, Tex., succeeding **R. G. Fitzpatrick**, who has been granted a leave of absence on account of ill health.

W. H. Guild, assistant superintendent of the First division of the Oregon-Washington Railroad & Navigation Co., with headquarters at Portland, Ore., has been promoted to superintendent of the second division, with headquarters at LaGrande, Ore., succeeding **William Bollons**, who has retired. **M. C. Williams**, division engineer of the First division, with headquarters at Portland, Ore., has been promoted to assistant superintendent, with the same headquarters.

C. A. Forbes, trainmaster of the White River division of the Missouri Pacific, with headquarters at Cotter, Ark., has been transferred to the Central division, in place of **F. L. Hays**, transferred. **W. P. Hayes**, trainmaster on the Arkansas division, with headquarters at Little Rock, Ark., has been transferred to the Missouri division, with headquarters at Poplar Bluff, Mo., succeeding **H. P. Galbreath**, who in turn succeeds Mr. Hayes on the Arkansas division. These items were incorrectly reported in the *Railway Age* of May 8.

Irving C. Blodgett, who has been appointed assistant to the mechanical superintendent of the Boston & Maine, with headquarters at Boston, Mass., was born on November 10, 1883, at Saratoga Springs, N. Y., and was educated in the Saratoga Springs High School. He entered railway service in May, 1901, as a fireman on the Boston & Maine, and in 1905 he was promoted to engineman. In 1916 Mr. Blodgett was appointed road foreman of engines, which position he was holding at the time of his recent appointment as assistant to the mechanical superintendent of the Boston & Maine.



I. C. Blodgett

J. P. LaBarge, general yardmaster on the International-Great Northern, with headquarters at Palestine, Tex., has been promoted to superintendent of safety of the Missouri Pacific, with headquarters at Houston, Tex. He was born on June 6, 1880, and entered railway service as a clerk with the Terminal Railroad Association of St. Louis in 1902. In the latter part of the same year he became an accountant. He held the latter position until 1904 when he was employed as a switch tender at St. Louis. In 1905 he was appointed night yardmaster on the International-Great Northern at Palestine, Tex., and in 1906, was promoted to general yardmaster, which position he has held until his recent promotion.

Traffic

F. O. Finn, general agent of the Chicago, Milwaukee & St. Paul, with headquarters at Victoria, B. C., has been promoted to general agent in the Orient, with headquarters at Shanghai.

K. T. Mindemann has been appointed general agent of the Union Pacific, with headquarters at Milwaukee, Wis., succeeding **E. G. Clay**, who has been assigned to other duties.

J. F. Hennessey, Jr., division freight agent of the Missouri-Kansas-Texas, with headquarters at Houston, Tex., has been promoted to assistant general freight agent, with headquarters at Dallas, Tex.

Charles F. Palmer has been appointed New England passenger agent of the Boston & Maine, to give special attention to travel on the road's new Chicago train, the "Minute Man," which begins operation on May 15.

C. D. Arnold, assistant general freight agent of the Southern Pacific lines in Texas, has been appointed general freight agent of the Southern Pacific Steamship lines (commonly known as the "Morgan Line"), with headquarters at New York.

E. K. Fleming, general agent, freight department, of the Chicago, Burlington & Quincy, with headquarters at Chicago, has been promoted to general freight agent in charge of solicitation, with the same headquarters, a newly created position.

J. C. Cummings, chief clerk in the passenger department of the Oregon-Washington Railroad & Navigation Company, with headquarters at Portland, Ore., has been promoted to general baggage agent, with the same headquarters, succeeding **J. H. Regal**, deceased.

Louis M. Porter has been appointed traffic manager of the Eastern division of the Fruit Dispatch Company, with headquarters at New York City, and **W. M. Penick** has been appointed traffic manager of the Southern division, with headquarters at New Orleans, La. They will report to the general traffic manager. The positions of assistant traffic manager at New York and at New Orleans have been abolished.

Engineering, Maintenance of Way and Signaling

George H. Wells has been appointed chief engineer of the Georgia, Florida & Alabama, with headquarters at Bainbridge, Ga., succeeding **L. V. Bean**, who has resigned.

N. C. Pearson has been appointed division engineer of the First division of the Oregon-Washington Railroad & Navigation Company, with headquarters at Portland, Ore., succeeding **M. C. Williams**, promoted to assistant superintendent.

F. M. Sloane, division engineer on the Chicago, Milwaukee & St. Paul, with headquarters at Spokane, Wash., has been promoted to district engineer of the Middle district, with headquarters at Milwaukee, Wis., succeeding **C. U. Smith**, resigned.

W. F. McDonald, assistant engineer on the Chicago, Milwaukee & St. Paul, with headquarters at Milwaukee, Wis., has been promoted to division engineer, with headquarters at Spokane, Wash., succeeding **F. M. Sloane**, promoted to district engineer of the Middle district.

G. I. Hayward, assistant district engineer of the Northern Pacific, with headquarters at St. Paul, Minn., has been promoted to district engineer, with headquarters at Spokane, Wash., succeeding **J. D. Koren**, who has been retired under the pension rule. **H. F. Brown**, assistant engineer, with headquarters at Seattle, has been promoted to assistant district engineer at St. Paul in place of Mr. Hayward.

Special

F. N. Melius, general superintendent of the New York Terminal district of the New York Central and the West Shore, has also been appointed assistant manager of the marine department.

Obituary

Patrick Minehan, terminal superintendent of the Erie, with headquarters at Youngstown, Ohio, died at Sharpsville, Pa., on May 8.

W. F. Renshaw, formerly general superintendent of motive power of the Illinois Central, who retired in 1908, died at Chicago on May 8 at the age of 75 years.

Andrew Cunningham, consulting engineer of the Terminal Railroad Association of St. Louis and formerly chief engineer of the Wabash, with headquarters at St. Louis, Mo., died at his home in that city on May 11.